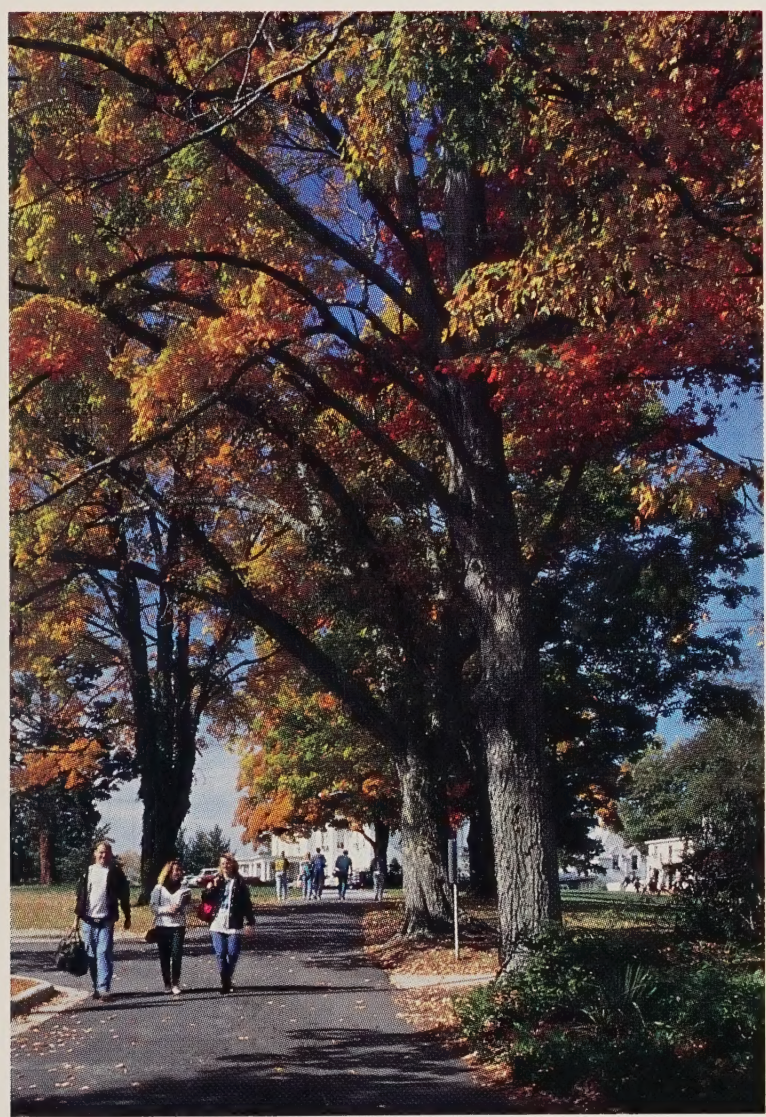






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ASHEVILLE-BUNCOMBE TECHNICAL COMMUNITY COLLEGE

340 Victoria Road
Asheville, N.C. 28801

Phone: (704) 254-1921
TDD: 254-1921, ext. 444

or

Depress space bar several times for
Operator Assistance

Recognized and Approved by
North Carolina State Board of Education
North Carolina Department of Community Colleges
North Carolina Office of Emergency Medical Services
Division of Vocational Rehabilitation
and for Veterans Participation

Member of
American Association of Community and Junior Colleges
North Carolina Department of Community Colleges
Student Services Personnel Association
N.C.A.C.C. Instructional Administrators
Association of Community College Business Officials
American Library Association
Learning Resources Association
Council for Advancement and Support of Education

Accredited By
North Carolina Board of Nursing
National Accrediting Agency for Clinical Laboratory Sciences
American Medical Association
American Dental Association, Commission on Dental Accreditation
**Asheville-Buncombe Technical Community College is accredited by the
Commission on Colleges of the Southern Association of Colleges
and Schools to award Associate degrees.**

**Catalog of Courses
Day and Evening College**

Volume 33
1995-1996

COLLEGE PROGRAMS

Program Title	Degree/Diploma/Certificate	Schedule
Accounting	A.A.S. Degree	Day/Evening
Administrative Office Technology	A.A.S. Degree	Day
Air Conditioning, Heating and Refrigeration	Diploma	Day/Evening
Associate Degree Nursing	A.A.S. Degree	Day
Automotive Mechanics	Diploma	Evening
Automotive Service Technician	A.A.S. Degree	Day
Basic Law Enforcement Training	Certificate	Day/Evening
Business Administration	A.A.S. Degree	Day/Evening
Business Computer Programming	A.A.S. Degree	Day/Evening
Civil Engineering Technology	A.A.S. Degree	Day/Evening
College Transfer	A.A., A.S. Degree	Day/Evening
Culinary Technology	A.A.S. Degree	Day
Dental Assisting	Diploma	Day
Dental Hygiene	A.A.S. Degree	Day
Diesel Vehicle Maintenance	Diploma	Day
Drafting and Design		
Engineering Technology	A.A.S. Degree	Day/Evening
Early Childhood Associate	A.A.S. Degree/ Certificate	Day
Electronic Servicing	Diploma	Evening
Electronics Engineering Technology	A.A.S. Degree	Day/Evening
Emergency Medical Science	A.A.S. Degree	Day
General Office Technology	A.A.S. Degree	Day
	Diploma	Day/Evening
General Technology Curriculum Core	Certificate	Day/Evening
Hotel and Restaurant Management	A.A.S. Degree	Day
Industrial Electrical/ Electronics Technology	A.A.S. Degree	Evening
Law Enforcement Technology	A.A.S. Degree	Day/Evening
Machinist	Diploma	Day/Evening
	Advanced Diploma	Evening
Marketing and Retailing	A.A.S. Degree	Day/Evening
Mechanical Engineering Technology	A.A.S. Degree	Day/Evening
Medical Laboratory Technology	A.A.S. Degree	Day
Operations Management Technology	A.A.S. Degree	Day/Evening
Phlebotomy	Certificate	Day
Practical Nursing	Diploma	Day
Radiography	A.A.S. Degree	Day
Real Estate Appraisal	Certificate	Evening
Real Estate Technical Specialty	Certificate	Evening
Residential Carpentry	Diploma	Day/Evening
Social Service Associate	A.A.S. Degree	Day
Surveying Technology	A.A.S. Degree	Day/Evening
Tool Design Technology	A.A.S. Degree/ Certificate	Evening
Tool, Die and Mold Making	Technical Diploma	Day/Evening
Welding	Diploma	Day/Evening

DIRECTORY OF COLLEGE SERVICES AND OFFICES

Academic Programs	Vice President, Instructional Services Simpson Administration Building Extension 120
ADA Coordinator	Personnel Officer Azalea Building Extension 113
Admissions, Applications, Catalogs	Admissions Office Student Services Azalea Building Extension 149
Books	Bookstore Oak Gym/Student Center Extension 200
Continuing Education and Off-Campus Programs	Associate Vice President Pines Building Extension 130
Counseling	Counselors Student Services Azalea Building Extension 142, 146, 206
Disabled Student Services	Coordinator of Special Needs, Student Services Azalea Building Extension 141
Emergencies	Security Office Extension 125
Financial Aid	Financial Aid Office Azalea Building Extension 160
GED Preparation	Pines Building Extension 132/136
GED Testing	GED Examiner Pines Building Extension 132/136
GED Test Result/Transcripts	Continuing Education Pines Building Extension 312

Grade Changes	Class Instructor
Job Placement	College Recruiter Azalea Building Extension 210
News, Publications	Director of Development Simpson Administration Building Extension 116
Parking Permits	Accounting Clerk/Cashier Simpson Administration Building Extension 152
Payments, Student Accounts	Business Office Simpson Administration Building Extension 152/156
Student Academic Records, Transcripts, Registration, Drop/Add Classes	Registrar's Office Student Services Azalea Building Extension 147/148
Student Activities, Intramurals, and Wellness	Director of Student Activities Oak Gym/Student Center Extension 203
Transfer Credits/Transcript Evaluation (Transfer to A-B Tech)	Director of Admissions Student Services Azalea Building Extension 149
Transfer-to-Senior-College Information	Transfer Counselor Student Services Azalea Building Extension 146
Tutoring	Guided Studies Laurel Building Extension 314
Veterans	Veteran's Service Office Azalea Building Extension 206
Visiting the Campus	College Recruiter Student Services Azalea Building Extension 210

Address correspondence to the appropriate office in care of
Asheville-Buncombe Technical Community College
340 Victoria Road
Asheville, NC 28801
(704) 254-1921

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Enrollment will determine offering or continuing a curriculum.

*Curricula offered during both day and evening hours.

COLLEGE CALENDARS 1995-1996

FALL QUARTER

Registration: Curriculum Freshmen and Current Students (By Appointment) ..	August 7-11
Registration: New and Unclassified Students	August 14-31, September 5
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	September 1
Freshman Orientation	September 5
Classes Begin	September 6
Last Day for Registration and Payment	September 12
Last Day to Drop For a Refund**	See Refund Policy
High School Visitation Day	T.B.A.
1995 Staff Development Day	October 23
Last Day Of Examinations	November 21
Total Class Days	55
Optional Days	November 22,27
Holidays: Thanksgiving	November 23, 24

WINTER QUARTER

Registration: Current Students	November 6-10
Registration: New and Unclassified Students	November 13-28
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	November 27
Classes Begin	November 29
Last Day For Registration and Payment	December 5
Last Day to Drop For a Refund**	See Refund Policy
Last Day For Examinations	February 26
Total Class Days	55
*Optional Days	February 27-29, March 1, 4, 5
Holidays: Christmas and New Year's Holidays	December 21-29, January 1
Martin Luther King, Jr.	January 15

SPRING QUARTER

Registration: Current Students	February 5-9
Registration: New and Unclassified Students	February 12-March 6
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	March 5
Classes Begin	March 7
Last Day For Registration and Payment	March 13
Last Day to Drop For a Refund**	See Refund Policy
Last Day Of Examinations	May 24
Total Class Days	55
Optional Days	May 27-31
Holidays: Good Friday	April 12 5
Easter Monday	April 18 8

SUMMER QUARTER

Registration: Current Students	May 6-10
Registration: New and Unclassified Students	May 13-June 3
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	May 31
Classes Begin	June 4
Last Day For Registration and Payment	June 10
Last Day to Drop For a Refund**	See Refund Policy
Last Day Of Examinations	August 20
Graduation	August 23
Total Class Days	55
Optional Days	August 21, 22, 26-30
Holidays: Independence Day	July 4
Labor Day	September 2

Twelve months faculty may select any 14 optional days as vacation; nine months faculty, any 10.5 days. Remaining optional days are faculty workdays.

*Up to three days lost due to inclement weather may be made up at this time.

**To drop a class for a refund, see the Refund Policy in this catalog or in the Student Handbook.

EVENING AND WEEKEND COLLEGE CALENDAR 1995-96**FALL QUARTER**

Registration: Curriculum Freshmen and Current Students (By Appointment) ..	August 7-11
Registration: New and Unclassified Students	August 14-31, September 5
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	September 1
Freshman Orientation	September 5
Classes Begin	September 6
Last Night for Registration and Payment	September 12
Last Night to Drop for a Refund**	See Refund Policy
Last Date of Scheduled Classes/Final Examinations	November 21
Total Class Days	55
Holidays: Thanksgiving	November 23, 24

WINTER QUARTER

Registration: Current Students	November 6-10
Registration: New and Unclassified Students	November 13-28
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	November 27
Classes Begin	November 29
Last Night for Registration and Payment	December 5
Last Night to Drop for a Refund**	See Refund Policy
Last Date of Scheduled Classes/Final Examinations	February 26
Total Class Days	55
*Inclement Weather Make-Up Dates	February 27-29
Holidays: Christmas and New Year's Holidays	December 21-29, January 1
Martin Luther King, Jr.	January 15

* Classes missed because of inclement weather may be made up during this period.

SPRING QUARTER

Registration: Current Students	February 5-9
Registration: New and Unclassified Students	February 12-March 6
Financial Aid Recipients Charge Tuition & Fees (9:00 a.m. - 3:00 p.m.)	March 5
Classes Begin	March 7
Last Night for Registration and Payment	March 13
Last Night to Drop for a Refund**	See Refund Policy
Last Date of Scheduled Classes/Final Examinations	May 24
Total Class Days	55
Holidays: Good Friday	April 12
Easter Monday	April 15

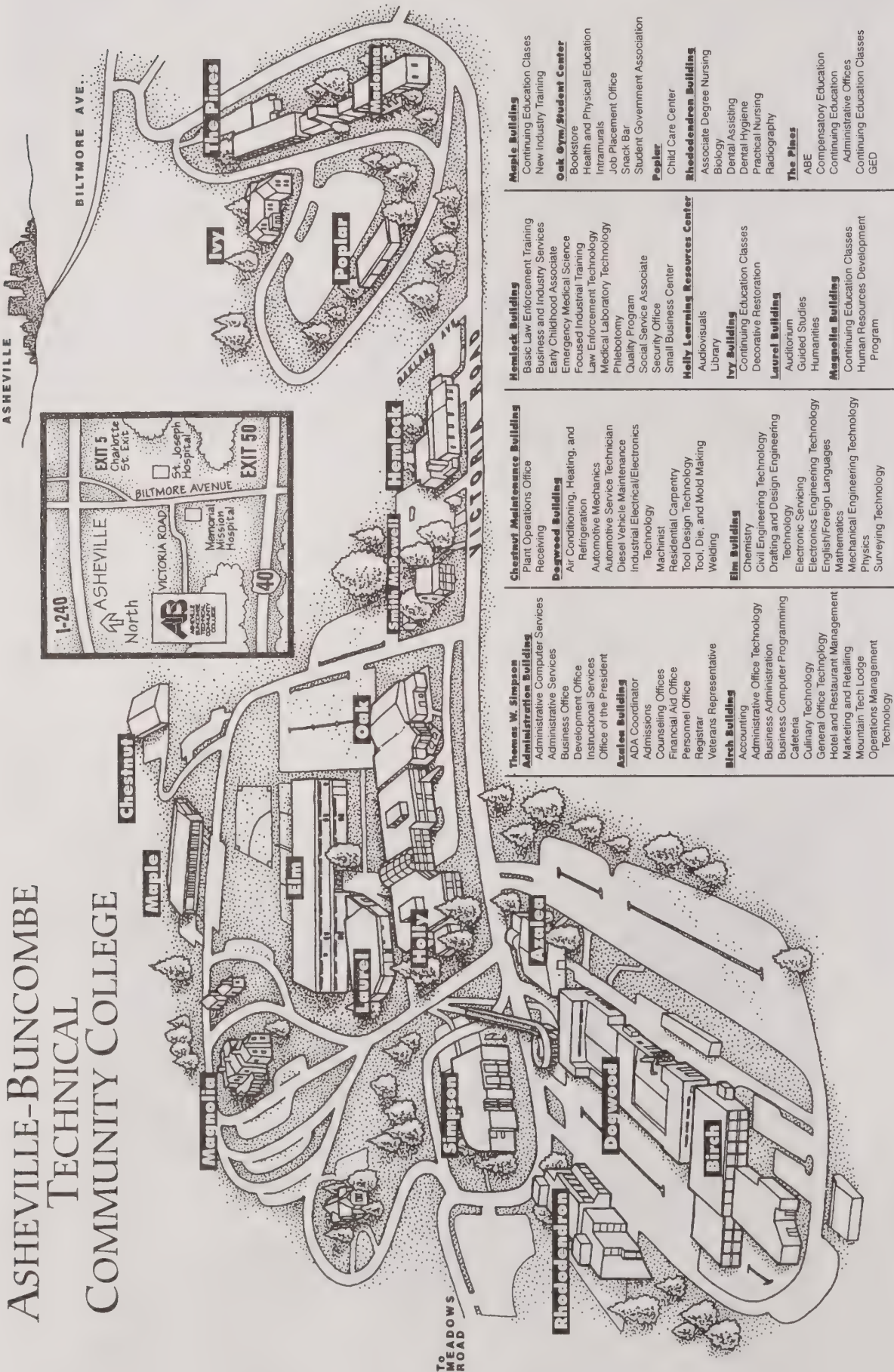
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Graduation	August 23
Total Class Days	55
Holidays: Independence Day	July 4
Labor Day	September 2

**To drop a class for a refund, see the Refund Policy in this catalog or in the Student Handbook.



Something to laugh about.



BUILDINGS LEGEND**MAIN CAMPUS****Thomas W. Simpson****Administration Building**

Administrative Computer
Services
Administrative Services
Business Office
Development Office
Elevated Lecture Room
Instructional Services
Office of the President

Azalea Building

ADA Coordinator
Admissions
Counseling Offices
Financial Aid Office
Personnel Office
Recruiter
Registrar
Veterans Representative

Birch Building

Accounting
Administrative Office
Technology
Business Administration
Business Computer
Programming
Cafeteria
Culinary Technology
General Office Technology
Hotel and Restaurant
Management
Marketing and Retailing
Mountain Tech Lodge
Operations Management
Technology

Chestnut Maintenance Building

Plant Operations Office
Receiving

Dogwood Building

Air Conditioning, Heating,
and Refrigeration
Automotive Mechanics
Automotive Service Technician
Diesel Vehicle Maintenance
Industrial Electrical/
Electronics Technology
Machinist
Residential Carpentry
Tool Design Technology
Tool, Die, and Mold Making
Welding

Elm Building

Chemistry
Civil Engineering Technology
Drafting and Design
Engineering Technology
Electronic Servicing
Electronics Engineering
Technology
English/Foreign Languages
Mathematics
Mechanical Engineering
Technology
Physics
Surveying Technology

Hemlock Building

Basic Law Enforcement Training
Business and Industry Services
Early Childhood Associate
Emergency Medical Science
Focused Industrial Training
Law Enforcement Technology
Medical Laboratory Technology
Phlebotomy
Quality Program
Security Office
Small Business Center
Social Service Associate

Holly Learning Resources Center

Audiovisual Services
Library

Ivy Building

Continuing Education Classes
Decorative Restoration

Laurel Building

Auditorium
Guided Studies
Humanities

Madonna

Leased to Religious of
Christian Education

Magnolia Building

Continuing Education Classes
Human Resources
Development Program

Maple Building

Continuing Education Classes
New Industry Training

Oak Gym/Student Center

Bookstore
Health and Physical Education
Intramurals
Job Placement Office
Snack Bar
Student Government Association

Poplar

Child Care Center

Rhododendron Building

Associate Degree Nursing
Biology
Dental Assisting
Dental Hygiene
Practical Nursing
Radiography

Smith-McDowell

Museum of WNC History
Leased to WNC Historical
Association

The Pines

Adult Basic Education (ABE)
Compensatory Education
Continuing Education
Administrative Offices
Continuing Education
Classes
General Education
Development (GED)

MADISON CAMPUS

The Madison Campus of Asheville-Buncombe Technical Community College is located on the Marshall Bypass in Marshall, North Carolina. Both credit and continuing education classes are offered day and evening.

Liston B. Ramsey

Administrative Offices
Auditorium
Classrooms

Computer Lab
Conference Room
Shop

ORGANIZATION

HISTORY

Asheville-Buncombe Technical Community College has served as the community's premier technical educator for over thirty years. Originally funded by a bond election, the institution was established on September 1, 1959, and named the Asheville Industrial Education Center.

Following legislation creating the North Carolina System of Community Colleges that was enacted in 1963 by the General Assembly, the name was changed on January 27, 1964, to Asheville-Buncombe Technical Institute. This legislation enabled the College to confer the Associate in Applied Science degree for the first time at graduation ceremonies in August, 1964.

The Board of Trustees approved a third name change to Asheville-Buncombe Technical College on August 6, 1979.

A final name change occurred on November 2, 1987, when the Board of Trustees approved Asheville-Buncombe Technical Community College, an action which became official when endorsed by the Buncombe County Commissioners on November 3, 1987.

In October 1988 the College received approval to offer Associate degree programs and in September 1989 enrolled its first class for the Associate in Science degree. The Associate in Arts degree was offered for the first time during Summer Quarter 1990-91.

On January 18, 1990, A-B Tech officially opened a satellite campus in Madison County. The College had served the county out of temporary quarters at the Marshall Elementary School since December 12, 1984.

In the early years, the College administered the operation of four units located throughout western North Carolina. These units have gained independent status and are now fully accredited community colleges.

ADMINISTRATION

The College was initially administered by the Asheville City School Board of Education. Following the establishment of the North Carolina System of Community Colleges, control passed to an independent board of trustees.

From the beginning, prominent Asheville and Buncombe County business and community leaders have helped to guide the College. In addition, each department has an advisory committee made up of local practitioners. All together several hundred local citizens provide guidance for the educational programs of the College.

CURRICULA

The first program offered by the College was Practical Nursing. Electronics Engineering Technology and the Machinist programs were started in 1960. These three curricula are still offered along with many other career and college transfer programs.

The College offers the Associate in Science, the Associate in Arts, and the Associate in Applied Science degrees, technical diplomas, diplomas, and certificates.

The Associate in Science and Associate in Arts degree programs are offered in the Division of Arts and Sciences. All career curricula and courses are offered

through three divisions: Allied Health and Public Services Education, Business and Hospitality Education, and Engineering and Applied Technology. In addition, noncredit academic, avocational, practical skills, and occupational classes and activities are offered through the Continuing Education Division.

Continuing Education courses are generally offered, with sufficient enrollment, on demand. Curriculum courses are usually offered on planned schedules in both the day and evening/weekend programs. Many curriculum classes are also offered in *clusters* for *unclassified* students. Some Continuing Education courses--including Adult Basic Education, Human Resources Development, New and Expanding Industry Training, Small Business Center, Total Quality Management, and Focused Industrial Training activities--are ongoing or are repeated on a regular basis.

Both curriculum and Continuing Education programs are supported through the activities of the GED Testing program, Guided Studies, and the Learning Resources Center.

Classes meet on campus and at various off-campus sites. Course requirements are the same without regard to meeting times or locations.

CAMPUS FACILITIES

On March 15, 1961, the Industrial Education Center moved into two newly constructed buildings off Victoria Road. Over the years the Board of Trustees has acquired land that today totals 126.76 acres.

Twenty-one buildings house academic programs and campus services. Included in this total is the Smith-McDowell House, the oldest brick house in Buncombe County, leased to the Western North Carolina Historical Association.

On January 18, 1990, the College established a campus in Madison County. The satellite operation provides adult education, upgrading, and college credit courses for the people of Madison County.

Over the years a combination of special funding has provided for campus expansion. Since 1985 the North Carolina General Assembly has approved \$5 million in special legislation for campus construction.

Since 1987, Buncombe County voters have approved \$13.5 million in bonds to be used for campus additions and renovations. In 1993, a statewide bond referendum gave A-B Tech another \$5 million for capital projects.

Buncombe County Commissioners purchased for A-B Tech property belonging to St. Genevieve Gibbons Hall, a private school that merged with Asheville Country Day School to form the Carolina Day School. The Board of Trustees acquired the title to these 12.77 acres and four buildings on September 23, 1987.

On October 21, 1987, A-B Tech in cooperation with Buncombe Child Development opened a Child Care Center, which offers both day and evening service to students and faculty.

CURRENT STATUS

Asheville-Buncombe Technical Community College with strong local support has grown in facilities and land acquisition, in enrollment, in curricula, and in expanded services to the community until today the College has the largest headcount enrollment of any institute of higher education in western North Carolina.

LOCATION

The main campus is located off Victoria Road in Asheville, North Carolina, a city repeatedly named as one of the most livable towns in America.

Situated near major interstates and on local bus routes, the College is convenient to the citizens it serves. Ample parking close to class buildings is provided free on campus.

The Madison Campus is located in Marshall, North Carolina.

COLLEGE MISSION STATEMENT

Asheville-Buncombe Technical Community College, established in 1959, is a public, two-year college committed to preparing students for employment, further education, and development of responsible attitudes needed in modern society. The College's commitment is to provide quality educational opportunities that encourage students to attain their individual, academic and career goals. The College strives to fulfill this commitment through continuous improvement of programs, employees, and support services.

As a member of the North Carolina Community College system, the College is dedicated to serving Western North Carolina, primarily Buncombe and Madison counties, in the role of a comprehensive community college where the doors are open to all adults who desire to continue their education. Programs and services are available to meet students at their ability levels and to assist them in attaining realistic educational goals.

In support of these commitments, Asheville-Buncombe Technical Community College offers:

- * courses to provide marketable skills to prepare students for employment in business, the technologies, the skilled trades, and health-related careers.
 - * the first two years of study for those seeking transfer to a four-year college or university.
 - * opportunities for life-long learning to enhance personal, social, cultural, and recreational life.
 - * training in basic skills to improve literacy and general education to assist students in obtaining their high school credentials.
 - * programs for students who need to develop basic academic skills for post-secondary study.
 - * upgrading of skills for those currently employed in fields experiencing advances in technology.
 - * counseling services for personal, academic, and career guidance; and other support services such as financial aid, on-campus child care, tutoring, and reasonable accommodations for students with special physical and learning needs.
 - * upgrading human relations skills at all organizational levels.
-

* assistance with economic development of the community, region, and state directly and indirectly through the education and training of current and potential employees, and through technical assistance to individuals, businesses, industries, and public and private service agencies.

ABTCC and its Board of Trustees, through its administrators, further support its mission by employing and developing qualified instructional and support staff, acquiring and maintaining the resources necessary for its programs, ensuring financial accountability, providing public information, assuring equality of access without discrimination, involving college personnel and students in decision-making-processes, and by coordinating its programs and offerings with other educational institutions.

College development is attained through a dynamic planning process based on sound investigation and research by involved administration, faculty, staff and students.

PHILOSOPHY

Asheville-Buncombe Technical Community College exists to serve the students. The College's commitment includes recognizing the individual worth of all students, accepting them at the level we find them, and assisting them to attain realistic objectives. The College subscribes to the belief that those who are affected by decisions should be involved in the process itself and consequently strives to involve students, faculty, staff, and community in the formulation of policies and practices.

In order to assure everyone an equal opportunity to learn and improve skills and to develop social abilities and responsible attitudes, our doors are open to anyone of appropriate age who can profit from our programs. Inherently involved in the concept of the open door policy and the formulation of realistic goals are the processes of guidance and counseling. The College believes that adequate guidance and counseling services should be readily available to every applicant and should continue throughout the student's educational career.

Asheville-Buncombe Technical Community College serves an essential role in regional economic development. The College is concerned with providing an educated citizenry to maximize economic growth. Accordingly, the College strives to maintain flexible programs of instruction that are continuously responsive to the needs of students as well as the changing needs of present and prospective employers.

The College promotes excellence in teaching by supporting creative, critical, and independent inquiry, high standards for knowledge acquisition, and the achievement of intellectual understanding, freedom from restraints due to ignorance, prejudice and intolerance, and an understanding of the relationships of the individual to society. The implications of academic freedom include teaching and publishing, unhindered by others.

We are committed to the maximum utilization of our resources and the greatest possible efficiency in their use. To this end, many curriculum and special courses are offered during evening hours, or by special arrangement. We also believe that self-evaluation and dynamic program review provide the most effective base for responsible decision-making. Periodic reviews are built into our programs at every level necessary to provide an education that is flexible, progressive, and sensitive to the changing needs of our clientele.

DIVISIONAL OBJECTIVES

ALLIED HEALTH AND PUBLIC SERVICE

The Allied Health and Public Service Education Division provides students with opportunities at the postsecondary level to acquire knowledge, skills, and attitudes that will enable them to become effective and safe members of health care and public service teams.

BUSINESS AND HOSPITALITY EDUCATION

The objective of the Business and Hospitality Education Division is to provide practical dynamic college-level business and hospitality training with emphasis on the development of professional skills.

CONTINUING EDUCATION

Continuing Education provides vocational education opportunities for the unemployed, upgrading courses for those already employed, adult basic education for those desiring a higher educational level, and certain avocational courses for individual enrichment.

ENGINEERING AND APPLIED TECHNOLOGY

The Engineering and Applied Technology Division offers a variety of Associate in Applied Science degree programs in engineering technologies and diploma programs in applied technologies. Degree-level students are provided an appropriate blend of engineering, scientific, and mathematical theories with applications. Diploma-level students are provided training that is closely related to the industrial work environments. Appropriate related and general education courses are provided in support of these programs.

ARTS AND SCIENCES

The Arts and Sciences Division contributes to the growth of students for productive involvement and participation in a technological society by providing essential postsecondary communicative and quantitative skills as well as an understanding of human relations and the human environment. The division offers the core courses and provides coordination for the College Transfer programs.

LEARNING RESOURCES CENTER

The mission of the Learning Resources Center is to support the instructional program of the college through the provision of adequate, up-to-date resource collections and instruction in their use, audiovisual services, and education materials to promote life-long learning.

Objectives

1. To assume an integral support role in fulfilling the mission of the College.
 2. To provide library services designed to support and enrich College instructional programs.
 3. To provide audiovisual services to the faculty, staff, and students of the College. These services will include production, materials, and equipment to support the instructional program and related activities. Telecommunications and satellite reception will be provided for seminars and conferences.
-

4. To provide a learning environment in which the students can be free to explore interests, with a learning pace and manner specifically tailored to individual needs.
5. To provide for the special academic needs of disabled students.
6. To support community needs for instructional and resource materials and services consistent with the mission of the college.

NONDISCRIMINATION POLICY

Asheville-Buncombe Technical Community College does not discriminate on the basis of sex, race, color, national origin, age, disability, or religion, in the educational programs or activities which it operates. The College is required by Title IX of the Education Amendment of 1972 not to discriminate on the basis of sex, and under other Federal legislation the College will not discriminate on the basis of race, color, national origin, age, disability, or religion. The requirement not to discriminate in education programs and activities extends to employment in the College and to admission into its programs. Inquiries or complaints concerning the application of Title IX, the ADA, and other Federal nondiscrimination legislation to Asheville-Buncombe Technical Community College should be referred to:

Elizabeth R. Heaton
Personnel Officer/ADA Coordinator
Asheville-Buncombe Technical Community College
340 Victoria Road
Asheville, North Carolina 28801
Azalea Building
Telephone: (704) 254-1921
TDD: 254-1921, ext. 444
or
Depress space bar several times for operator assistance

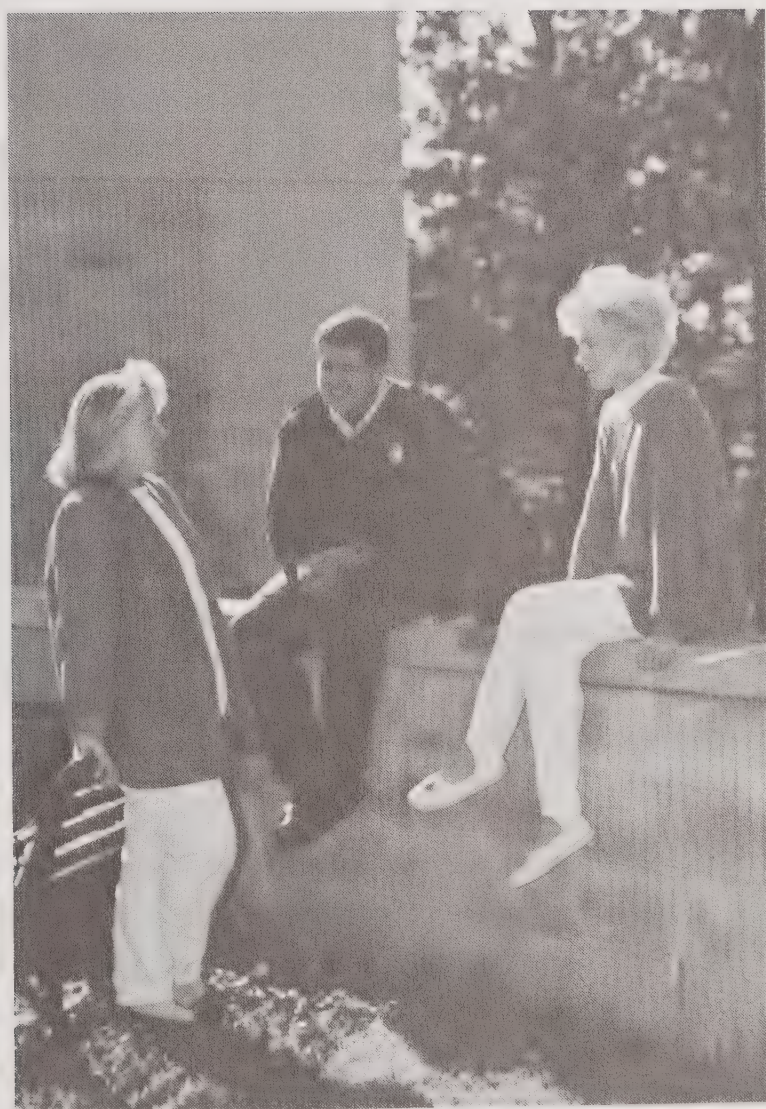
INDIVIDUALS WITH DISABILITIES

Individuals with disabilities (as defined in the Americans with Disabilities Act of 1990 ("ADA")) wishing to make a request for reasonable accommodation, auxiliary communication aids or services, materials in alternative accessible formats, or who wish to file a complaint of alleged discrimination on the basis of disability should contact the ADA Coordinator listed above.

COMMUNICABLE DISEASE POLICY

It is the policy of Asheville-Buncombe Technical Community College not to discriminate against any applicant, employee or student who has or is suspected of having a communicable disease. As long as employees are able to satisfactorily perform the essential functions of the job, and there is no medical evidence indicating that the employee's or student's condition is a threat to the health or safety of the individual, coworkers, students or the public, an employee shall not be denied continued employment nor shall an applicant be denied employment nor shall a student be denied admission to the campus or classes based on whether or not s/he is suspected of having a communicable disease. The College will consider the educational or employment status of individuals with a communicable disease or suspected of a communicable disease on an individual, case-by-case basis following procedures outlined by the President.

CONTINUING EDUCATION



The Continuing Education Division offers basic education, courses, and training to support the economic development of the community and its citizens. Needs for higher academic education, employment skills, basic educational skills, job training and retraining, personal growth and development, and community and economic development are continually identified through a variety of assessments.

Different learning approaches to meet community needs involve traditional classroom instruction, individualized instruction, computer-assisted learning, community-based learning centers, on-site classes and training for business and industry, and apprenticeships. Also available is assessment, consultation, and technical assistance for individuals, businesses, industries, and public and private sector agencies.

The educational offerings of the Continuing Education Division are built on the concept of lifelong learning. Classes and training are provided in different formats, at a variety of times, and at locations where the needs of students can most conveniently be met.

Some of the Continuing and Off-Campus Education programs are coordinated with the Job Training Partnership Act (JTPA) or the Job Opportunities and Basic Skills (JOBS) programs of other agencies. These and other similar programs represent joint efforts to bring education and training services to the community.

Training and course work may carry Continuing Education Unit (CEU) credit; these unit credits are not a part of college curriculum diploma or degree programs. Curriculum courses that carry full college diploma and degree credits are offered at off-campus sites through the coordinated efforts of Continuing Education Program directors and the deans and department chairs of the four curriculum academic divisions of the College.

The Continuing Education Division provides programs for adults age eighteen or older. Minors may enroll for some classes with special permission. For some programs, the enrollment of minors cannot displace an adult.

COSTS

Costs for Continuing Education classes vary, but there is usually a nominal registration fee. Fees may also be charged for books, materials, and supplies. For most classes, North Carolina residents age sixty-five or older are exempted from registration fees. There are no registration fees for basic skills classes.

COURSE REPETITION

There is a limit on the number of times a student may enroll in a particular continuing education class. The *Continuing Education Course Repetition* policy guides enrollment in selected types of classes.

Occupational extension courses may not be taken more than twice within a five-year period without the student paying the full cost of the course as determined by the College. Students may repeat occupational extension courses more than once if the repetitions are required for certification, licensure, or recertification.

A course other than occupational extension may not be taken for more than two (2) consecutive terms without a break of at least one term. Students who are enrolled in Adult Basic Education (ABE), General Education Development (GED), or Compensatory Education classes may continue in them as long as reasonable educational and/or social progress is being made according to the goals of the

program. Students in Compensatory Education classes will be reviewed after no more than two years to determine whether they will continue in the program.

The College reserves the right to modify this policy in general or relative to a given course as necessary to meet the needs of the College and its students.

SERVICES

Continuing Education needs are addressed in two domains: (1) Business and Industry Services and (2) Community Education Services.

BUSINESS AND INDUSTRY SERVICES

The Center for Business and Industry provides programs and services to address the training and development needs that impact the local and regional economy. The Center ties the College to the associated efforts of local, regional, and state agencies for economic development.

Focused Industrial Training. **Focused Industrial Training (FIT)** is designed to address the special needs of existing North Carolina industry. Serving primarily manufacturing clients, FIT uses individualized need assessments and consultations to target training to upgrade and update workers' skills needed to keep pace with changes in technology. FIT job training can be designed for skilled and semi-skilled workers, such as material handlers, assembly technicians, welders, machinists, maintenance mechanics, metal workers, production line workers, and woodworking machine operators.

New and Expanding Industry. **New and Expanding Industry** needs are met through customized training programs designed especially for prospective employees and funded at no cost to the employer. For some new industries, the Maple Building Skills Center is available for on-campus training.

Occupational Programs. **Occupational Programs** provide education and training for individuals to prepare for new or different employment and to upgrade the skills of individuals in their current employment. These opportunities are available through single courses or a series of courses specifically designed for an occupation. A significant number of these courses are offered to meet licensure or certification requirements for employment in careers such as Fire and Fire Rescue, Emergency Services, Criminal Justice/Law Enforcement, Certified Nursing Assistant (CNA), Insurance, Real Estate, and Child Care. Other offerings include programs for the following occupational areas: hospitality, medical, computer applications, business management, public education, electrical, construction, and inspection.

Small Business Center. **The Small Business Center** provides consulting and advising services to present and potential small business owners. Additionally, through very practical, short-term seminars, the Center addresses the continuing needs of small business clients for updating information, refining entrepreneurial skills, and enhancing techniques to improve the profit advantage in risk taking. The seminars frequently address the critical areas of capital formation and prevention of business failures. The Small Business Center works cooperatively with local chambers of commerce, the Active Corps of Executives (ACE), the Service Corps of Retired Executives (SCORE), the Center for Improving Mountain Living's small business counseling services, and the U.S. Small Business Administration.

Quality Program. **The Quality Program** provides training and technical assistance in total quality practices and ISO 9000 for businesses, industries, and public and private sector agencies. Programs include process improvement, team building, quality skills, statistical process control, facilitator development, self-

assessments, and all phases of ISO 9000 implementation. The program also partners with the American Society for Quality Control and the North Carolina Quality Leadership Foundation to provide quality course offerings. Additionally, a resource center for quality information and a lending library make specialized books and videos available.

COMMUNITY EDUCATION SERVICES

Educational opportunities are provided directly to the citizens of the community through the programs of Community Education Services.

Basic Skills. **The Basic Skills Programs** provide opportunities for upgrading reading, mathematics, English, and life skills. Assessment is a basic part of all of these programs. **The Adult Basic Education (ABE) Program** supports academic remediation in reading comprehension, mathematics, and language skills and provides pre-GED instruction.

One of two Adult High School Programs can lead the student to the equivalent of high school completion: (1) **The General Education Development (GED) Program** offers instruction in five subject areas in preparation for taking the high school diploma equivalency (GED) test and (2) the **Adult High School Diploma Program** provides instruction designed to qualify individuals for an adult high school diploma, awarded through a local board of education after the student successfully completes the North Carolina Competency Tests. Instruction for these programs is available on campus and at community learning centers or workplace sites when sufficient demand is determined.

English as a Second Language. **English as a Second Language (ESL)** is intended to improve the English reading, speaking, and writing skills of nonnative students. Both the cultural and linguistic needs and functional skills for life in the American adult community are emphasized.

Compensatory Education. **The Compensatory Education Program** is an academic program specifically for mentally retarded adults. The program comprises lessons in community living, consumer education, health, language, mathematics, social science, and vocational education. Emphasis is placed on helping each student become as independent as possible, primarily by improving social, survival, and independent-living skills.

Community Services. **The Community Services Program** provides courses, seminars, and activities that contribute to the community's overall cultural, civic, and intellectual growth and assists adults in the development of new skills or the upgrading of existing avocational, academic, and practical skills. Among the avocational component courses offered are calligraphy, personal photography, pottery, and art. The academic component includes courses such as languages, art appreciation, consumer economics, investments, and retirement planning. Catering, practical horticulture, woodworking, chair caning, upholstery, and small engine repair are typical class offerings in the practical skills component of the program.

Human Resources Development. **The Human Resources Development (HRD) Program** provides short-term prevocational training and counseling designed to help unemployed and underemployed adults successfully enter the work force or continue on for further training. Instruction focuses on training to find and keep a job and includes assessment of personal and career assets and limitations, development of problem-solving and communication skills, development of a positive self-image, improvement of academic skills, and an understanding of the dynamics of interpersonal relationships.

EDUCATIONAL SUPPORT SERVICES



GUIDED STUDIES

This department provides postsecondary students with instruction in basic math, English, and college success skills in both structured and unstructured settings.

A tutorial component serves curriculum students needing assistance outside of class in math or English related subjects. Tutoring is accomplished through individual sessions, small groups, and computer-assisted instruction.

As the point of entry for learners needing academic development, Guided Studies is sensitive to the needs of students making a transition to a college environment. Instructors design course work to accommodate first-time college students, those returning to school after an absence, and those with disabilities. The objective of this department is to enable students to develop the skills and behaviors that will lead to successful achievement in A-B Tech's curricula. The minimum passing grade is "C."

Guided Studies courses are listed in the quarterly class schedules. Current lab schedules can be obtained from Guided Studies personnel.

LEARNING RESOURCES CENTER

The Learning Resources Center (LRC) includes the Library and Audiovisual Services. Together, they provide information, guidance, and instruction in a wide range of resource material. In addition, the LRC provides a variety of A-V equipment to supplement classroom, laboratory, and shop experiences.

THE LIBRARY

The library makes available all of the LRC's collection of materials, both print and nonprint formats. The collection is well organized for easy use. Automated catalogs, circulation, electronic indexes, and reference services provide the user with state-of-the-art access to research and recreational materials. The primary objectives of the library are to provide information services and assist the user with utilization of the collection in an attractive, well-equipped facility that is open to the college and the community.

HOURS: Monday-Thursday	8:00 a.m.-10:00 p.m.	Closed Weekends
Friday	8:00 a.m.-4:30 p.m.	

AUDIO-VISUAL SERVICES

Audiovisual services are available to the College faculty, staff, and students. These services include production, materials, and equipment to support the instructional program and related activities, including satellite reception for seminars and teleconferences. The LRC maintains an inventory of audiovisual equipment to support College sponsored activities, along with an extensive collection of audiovisual materials. Computers and typewriters are available for student use.

HIGH SCHOOL DIPLOMA EQUIVALENCY (GED Test)

An adult who has not completed high school may take the Tests of General Educational Development (GED). Upon attaining a passing score of 225 points with no single test score below 35, a High School Diploma Equivalency will be awarded. This certificate is generally accepted on a basis equal to a high school diploma for employment, promotion, or further education.

The GED test covers five broad areas: Writing Skills, Mathematics, Social Studies, Science, and Interpreting Literature and the Arts.

The following requirements must be met before taking the GED tests:

1. Minimum age: 18 (16- and 17-year olds may take the GED test with special permission).
2. Residence: current North Carolina resident.
3. Make application for tests on official forms.
4. Cost: There is a \$7.50 fee to take the GED test. Retests in Writing Skills cost \$2.50 per test.
5. Make an appointment by calling A-B Tech, 254-1921, extension 433.

GENERAL ADMISSION REQUIREMENTS AND PROCEDURES

Asheville-Buncombe Technical Community College has an OPEN DOOR admission policy. High school graduation or equivalence is normally required for admission to any curriculum; however, there are also programs for nongraduates 18 years of age or older. The College begins accepting applications on September 15. Early application is advised for many programs. Admission to some curricula is competitive among qualified applicants according to established criteria.

Individually selected classes may be taken by Unclassified Students providing the prerequisites have been met. After accumulating 30 hours, Unclassified Students must see a counselor in Student Services in order to confirm further educational plans.

Placement into a specific course of study is based upon standards that will help to assure the applicant's success in that course of study. Those who do not yet possess the background required by the course of study of their choice may be enrolled in developmental courses designed to provide this background.

Educational background, interest, motivation, experience, and aptitude will be considered when an application is submitted to the College.

Persons wishing to enroll in a curriculum program at the College must complete the entire application process and meet requirements as follows:

1. Submit an application form.
2. Obtain transcripts of credits from all secondary and postsecondary schools attended. Records should show that the student is a high school graduate or has a state approved equivalent education.
3. Complete the battery of placement tests administered by the College. In the case of Allied Health programs, the placement tests are used to determine admissibility. Student suitability for admission to individual programs will be determined by scores on the tests and specific program requirements. (See programs for details.) Requests for reasonable accommodations or test exemption by transfer credit will be reviewed individually.*

**Alternate testing formats will be made available to individuals with disabilities upon request to the Coordinator of Students with Special Needs.*

4. Have a personal interview with the Student Services staff.
5. A complete physical examination may be required, but only after the student is admitted.

Upon completion of this procedure, the student will be accepted unconditionally or provisionally into the program. Provisional acceptance indicates that developmental classes are necessary; this status changes to unconditional acceptance once the developmental classes are completed.

COUNSELING AND TESTING

Generally, testing will be completed prior to acceptance and registration. A counselor will interpret test scores and will advise students concerning course selections. Alternate testing formats will be made available to individuals with disabilities upon request to the Coordinator of Students with Special Needs.

Students are encouraged to use counseling services at any time. Counseling will work at all times with individuals to keep them informed of the progress they are making and to support students as they work toward their educational goals. Career exploration and development services are available through the Counseling Center. Personal counseling and referral to community services are available as needed. Many reference materials and computerized programs are available to students through counseling services.

ACADEMIC ADVISING

In order to ensure that every student receives quality academic advising, Asheville-Buncombe Technical Community College has established an academic advising system. Students who are admitted to a curriculum are advised by a faculty member from that curriculum. Unclassified students are advised by the counselors in Student Services. Counselors initially determine the provisional courses for students based upon the results of placement testing. Faculty advisors determine the major area courses to be taken by provisional students. In all instances, a student's registration form must be signed by an appropriate advisor indicating that the schedule meets appropriate academic needs. No student will be allowed to register without an advisor's signature.

PROVISIONAL STUDENT STATUS

Provisional status accommodates those students who can benefit from the academic programs offered by the College but require additional developmental (Guided Studies) coursework to be successful in their chosen program. Any student seeking a diploma, degree, or certificate in a noncompetitive program of study may be eligible for provisional student status.

The determination of provisional status shall be dependent upon the results of testing and the professional judgment of the Student Services counselor to whom the student is assigned. The counselor will assist the student in developing a Plan of Individual Education (PIE) tailored to meet the student's academic needs. The PIE will document the developmental coursework required of the student and any additional courses determined by the counselor. A copy of the PIE will be filed in the student's permanent record.

Provisional students are generally permitted to register concurrently for developmental courses and required courses in their program of study as long as they

meet the prerequisites; however, it is recommended that the course schedule for any academic term not exceed 15 credit hours. Developmental courses must be taken beginning with the student's first quarter of enrollment and all such coursework must be completed as outlined by the student's academic advisor.

For more information about provisional student status, students are encouraged to contact Student Services.

TRANSFER CREDIT (Transcript Evaluation)

Credit From Other Institutions. Asheville-Buncombe Technical Community College will accept credit for parallel work completed in other post-secondary institutions accredited by a regional accrediting agency. Applicants who seek admission with advanced standing should make regular application and obtain from the Admissions Office a *Request for Transfer Credit* form for the evaluation of all postsecondary work. *Please note: Transcripts will not be evaluated until this form has been completed.* No credit will be granted for work below a "C" or the average grade given by the other institution. Transfer credit will be awarded for course work without grades or quality points. Proficiency credits from other institutions will not be accepted. At least half of the credit hours in a program of study must be received by taking courses and/or proficiency examinations at A-B Tech. If any course is taken for credit after transfer credit has been awarded, and a grade of A, B, C, D, or F is earned, it will replace the transfer credit and become the official grade for the course.

Internal Transfer Of Credit. Students who graduate and return or change majors for the first time will have their former A-B Tech work evaluated, if a Request for Transfer Credit form is completed:

1. Graduates of A-B Tech who return to the College for another program will have their former work evaluated as an internal transfer.
 2. Nongraduates who change programs for the first time will have their transcripts evaluated. Transcripts of unclassified students will be evaluated at the time they declare a major.
 3. Nongraduates returning to continue their program of study will not have their transcripts evaluated.
 4. All courses with passing grades applicable to the requirements of the new program, according to the current catalog, will be transferred or carried forward with existing grades.
 5. The initial grade point average will be determined by the courses and corresponding grades applied toward the current major.
 6. This process will be completed during the first quarter of reenrollment.
 7. Exceptions to any of the above procedures must have the approval of the Vice President, Instructional Services.
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Transfer Of Credit To Other Institutions. Asheville-Buncombe Technical Community College facilitates the transfer of credit to other institutions. The Associate in Arts and Associate in Science programs are designed to transfer to senior institutions at or near the junior level. Associate in Applied Science graduates have the option of entering a career, continuing their education at a senior institution, or doing both. We are proud of the fact that our graduates have a marketable job skill after two years of study and can also complete a four-year degree after two more years of academic work.

Students who attend most senior institutions do not declare a major until their junior year. Our programs are such that those students who earn a baccalaureate degree pursue it in an inverted pattern. The majority of the student's academic major is earned at A-B Tech in the first two years of study. As junior level students at the senior institution, they take general university requirements and may take more advanced courses relating to their major.

Parallel work, including single courses, completed at A-B Tech will transfer to other institutions in the North Carolina Community College System and to most senior institutions in the state. Most public and private four-year institutions in North Carolina, and many that are out of state, regularly accept credits from A-B Tech and generally enroll the graduates at approximately the junior level. The details of these affiliations are available from the transfer counselor in the Student Services office and the individual senior institutions.

A-B Tech strongly encourages its graduates to continue their formal educations after completion of their A-B Tech programs. It is important that graduates recognize the need to continue their educations throughout life to prepare for new and changing careers.

CREDIT BY EXAMINATION (Proficiency Examination)

Students who can provide tangible evidence of preparation to challenge a course, such as a transcript of similar college level credits, record of military study, certification or license, standardized test scores including CLEP, or written statements from employers regarding training or directly related work experience indicating that they may be proficient in a subject, may request credit by examination. A written request must be made to the proper Department Chairperson on a form obtained from the Registrar. This test must be administered immediately after the 30 percent point in the quarter.

Examinations are comprehensive and must be approved by the supervisor of the instructor administering the exam. The examination may be oral, performance, written, or a combination of these methods. To receive credit by examination, the score must be above average (B). The decision of the examining instructor is final. No quality points are awarded for credit by examination.

No student may request a second test for Credit by Examination in the same course or request Credit by Examination in a course after receiving *any* recorded grade for that course. Exceptions must have approval of the Vice President for Instruction.

Because of specific requirements, credit for certain courses may not be received through Credit by Examination. The courses which may not be challenged by examination are marked with an asterisk in the course description section of the catalog. Most institutions will not accept proficiency credits for transfer.

The following procedure must be used by students who request Credit by Examination:

1. Enroll as a credit student in the course to be challenged and pay tuition if enrolled on part-time basis. There is no extra charge for full-time students.
2. Present evidence of proficiency, complete the written request form, and have the request approved within the first ten (10) days of the quarter.
3. Remain enrolled and attend class until the examination is administered. During this period, students who have written approval for the exam may attend class without purchasing textbooks and materials. If books are purchased and returned for refund, they must be in new condition.
4. Students who are very confident of passing the exam may choose to begin with a course overload.
5. Students who perform on the exam at a level sufficient to get credit may leave the course and have an indication of Proficiency Credit by Examination (P) posted to their record for the course. Receiving proficiency credit does not entitle the student to a tuition refund.
6. Students who do not receive credit by examination are encouraged to purchase textbooks and materials and remain in the class to earn credit at the end of the quarter.
7. Students who receive financial assistance of any type are required to inform the director of their assistance program that they are seeking proficiency credit. Assistance may be reduced and reimbursement will be required if the course load is reduced by receiving credit by examination. Students may choose to overload in this case.

Any exceptions to these procedures must have prior written approval by the Vice President for Instruction and the appropriate Division Dean and Department Chairperson.

AUDITING COURSES

Students wishing to audit courses must register through regular registration procedures and pay standard tuition and fees. Students who register to take a course for credit and then choose to audit the course must do so within the first fifteen days of the term with approval of the instructor and by applying through the Registrar's Office for audit status. A student may change from audit to credit status through the Registrar's Office only during the first five days of the term. Audit work does not receive credit and cannot be used toward diploma or degree requirements. All prerequisites must be met before a course can be audited. Physical Education classes may not be audited.

BALANCING CLASS SIZE

Each student is assigned a sequential number for each curriculum class by the computer as fees are paid. This number determines position in the class should the class need to be split. The position determines the priority of the student to remain in the class. The College reserves the right to split classes and assign students to alternate sections whenever necessary to balance class size.

CURRICULUM COURSE REPETITION

Students who need a course to graduate may take the course as many times as necessary to pass it, providing space is available. Any course that has been passed or audited may not be taken for credit or audited more than twice per academic year subject to space being available after preregistration. The twice-per-year regulation also applies to single or elective courses that are not required for graduation. Physical education courses may not be audited. No single physical education course may be attempted more than twice.

COURSE SUBSTITUTIONS

Course substitutions may be made by the Director of Admissions as internal transfer of credit, according to the approved course equivalency list. Substitutions exceptions must be approved by the Vice President, Instructional Services.

TUITION AND EXPENSES

NORTH CAROLINA RESIDENCY

In order to qualify for the resident tuition rate, North Carolina law (G.S. 116-143.1) requires that a *legal resident* must have maintained his domicile in North Carolina for at *least the twelve months immediately prior* to his classification as a resident for tuition purposes.

One must also have accomplished many of the things normally done by one who intends to reside in a state permanently. Examples of these actions are being employed, paying taxes, having a current North Carolina driver's license, voting in the state, belonging to churches, clubs or other organizations. Anyone having a question regarding resident status should contact Student Services.

TUITION*

N.C. residents per quarter	\$185.50
Nonresident of N.C.	\$1,505.00
(14 or more credit hours)	
Part-time N.C. residents per credit hour per quarter	\$13.25
Nonresident of N.C. per credit hour per quarter	\$107.50
(fewer than 14 credit hours)	
LATE REGISTRATION FEE	\$5.00

North Carolina residents 65 years of age and older are exempted from the payment of curriculum tuition and registration fees for classes in Continuing Education.

** Tuition is subject to change.*

STUDENT ACTIVITY FEES

A student activity fee of \$7 will be charged quarterly to all day curriculum students enrolled for nine or more credit hours.

A fee of \$4 will be charge quarterly to all day students enrolled for eight or fewer credit hours.

Evening students may participate in activities by paying an admission fee established for each event.

STUDENT INSURANCE

Certain risks are inherent in any work involving regular contact with mechanical and electrical equipment. While stringent precautions will be taken to insure safety, it is felt to be in the interest of all students to provide some measure of insurance protection.

A group policy, providing the desired insurance protection, will be maintained in effect by the College and all students will be REQUIRED to subscribe to such coverage. The cost of accident insurance to the student will be approximately \$1.00-1.50 per quarter.

TUITION REFUND POLICY

A 100 percent refund shall be made if the student officially withdraws prior to the first day of classes of the quarter as noted in the college calendar. Also, a student is eligible for a 100 percent refund if the class in which the student is registered is canceled.

A 75 percent refund shall be made if the student officially withdraws from the class(es) prior to or on the official 20 percent point of the quarter. The 20 percent point is defined as the eleventh class day of the quarter.

Insurance and student activity fees are NOT refundable.
Federal regulations, if different from above, will overrule this policy.

TUITION REFUND PROCEDURE

To be eligible for a tuition refund the student must:

- 1. Register and pay tuition and fees.
- 2. Process a Registration Change Notice in the registrar's office on or before the 20 percent point of the quarter as defined above.

ADDITIONAL COSTS

A beginning student should be prepared to incur additional estimated expenses during the academic year (4 quarters) as follows:

ALLIED HEALTH AND PUBLIC SERVICES EDUCATION	
Books	\$375-550
Supplies	\$150-425
COLLEGE TRANSFER	
Books	\$400-500
Supplies	\$100-200
BUSINESS AND HOSPITALITY EDUCATION	
Books	\$400-550
Supplies	\$50-225
ENGINEERING AND APPLIED TECHNOLOGY	
Books	\$375-550
Supplies	\$120-650

Books and supplies costs vary from year-to-year by curriculum due to price changes, curriculum changes, and instructor preferences. For purposes of definition, the following items may be classified as supplies: pen, pencils, paper, notebooks, instruments, uniforms and shoes, rental of uniforms, safety equipment, hand tools, calculators, lab coats, membership dues, pins and caps. Students will incur most of the supply costs for their curriculum during the first quarter of study. Students are encouraged to consult with their department chairperson for actual costs of supplies for their curriculum.

Students should consult with their department chairperson or a member of the Math Department prior to the purchase of a calculator for use in class.

PARKING REGULATIONS

All students are required to register their vehicles and display parking permits. Copies of parking regulations are available in the Business Office. Designated parking spaces for individuals with disabilities are located at each facility.

STUDENT FINANCIAL AID

The purpose of the financial aid program at Asheville-Buncombe Technical Community College is to provide assistance to students who, without such aid, would be unable to attend the College. The program is committed to the philosophy that no eligible student should be denied access to a higher education because of a lack of financial resources.

An application for financial aid will gain consideration for grants-in-aid, loans, scholarships and student employment opportunities. In general, financial aid is awarded to students on the basis of need, academic potential, and future promise. In determining the student's need, it is assumed the student will help himself through summer jobs and part-time work while attending school, that the family will provide aid commensurate with its income and resources and that the student will avail himself of any other financial assistance which is available.

Students desiring financial aid for an academic year (September through August) are encouraged to apply early (January through March) to be given priority consideration for the funds available. Applications will be processed until all available funds are awarded.

Copies of all applications mentioned in the following procedure may be obtained from any high school guidance office, most college and university financial aid offices, or the A-B Tech Financial Aid Office. Alternative accessible application formats will be made available to individuals with disabilities upon request to the ADA Coordinator.

APPLICATION PROCEDURE

All applicants desiring priority consideration for available financial aid funds **must** complete the numbered steps below.

1. Before applying for financial aid it is advisable that each applicant complete the first three (3) steps of the Admission Procedure. (See the Table of Contents for the General Admission Requirements and Procedures page reference.)
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2. The applicant **must** complete and mail a free application for Federal Student Aid to the Federal Student Aid Programs in the envelope which accompanies the application.
3. When completing the application, the applicant **must** list the appropriate Title IV code number on the application. A-B Tech's code number is 004033.

Following the processing of the application, the applicant will receive a Student Aid Report (SAR). The SAR **must** be forwarded by the applicant to the Financial Aid Office without delay.

Once the Student Aid Report is received by A-B Tech's Financial Aid Office, the applicant's financial need will be determined. Official notification of awards is made no earlier than June 1 prior to enrollment. Each award is contingent upon the availability of funds.

Students desiring additional information about the Financial Aid Program at ABTCC are urged to write or phone: Director of Financial Aid, Asheville-Buncombe Technical Community College, 340 Victoria Road, Asheville, NC 28801, 704/254-1921, extension 161.

SATISFACTORY PROGRESS STANDARDS FOR FINANCIAL AID

Introduction. The Higher Education Act of 1965, as amended by Congress in 1980, mandates institutions of higher education to establish minimum standards of "satisfactory progress" for students receiving financial aid. For the purpose of maintaining a consistent policy for all students receiving financial aid administered by the College's Financial Aid Office, these standards are applicable to all financial aid programs including all Federally sponsored Title IV programs.

Satisfactory Progress Defined. Generally, a student is considered to be making satisfactory progress toward his/her curriculum program of study when three requirements are satisfied:

1. Maintain a minimum cumulative grade point average based on credit hours attempted.
2. Complete a minimum number of credit hours with grades of A, B, C, or D.
3. Successfully complete the curriculum program of study within a pre-established maximum time frame.

Students not meeting the satisfactory progress standards will have their financial aid eligibility terminated.

For specific guidelines regarding the above, students should refer to the most recent issue of the Asheville-Buncombe Technical Community College *Student Handbook and Events Calendar*, copies of which are available in the Student Services Department, located in the Azalea Building.

Appeal of Financial Aid Termination. To appeal financial aid termination a student must be able to demonstrate mitigating circumstances. The procedure for appeal is:

1. A student will indicate *in writing* to the Director of Financial Aid the reasons why he/she did not make satisfactory progress *and* why financial aid should not be terminated. Documentation to support the appeal is permitted.
 2. The Director of Financial Aid will review the appeal to determine whether or not termination of aid is justified. The student will be advised of the decision in writing.
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3. A student wishing to appeal the decision of the Director of Financial Aid, may do so, in writing, to the Student Financial Aid Committee, c/o the Financial Aid Office. Additional appeals may be made through the Student Due Process Procedure, then to the President, and finally to the Board of Trustees of the College; if deemed to be necessary by the student.

Reinstatement of Financial Aid Eligibility. Should a student have his/her financial aid eligibility terminated due to not meeting the satisfactory progress definition, termination will continue until the student enrolls for a subsequent academic term at his/her own expense and completes the term satisfying the satisfactory progress definition. Once the satisfactory progress definition is met eligibility is reinstated for the subsequent academic term. In addition, financial aid eligibility will immediately be reinstated for all appeals upheld.

VETERAN'S EDUCATIONAL BENEFITS

The Veteran's Counselor will help incoming veterans evaluate their eligibility for benefits. The Veteran's Office is located in the Azalea Building. Individuals applying for veteran's benefits must meet all entrance requirements and are required to meet the following academic standards as they progress through their programs. Failure to meet these academic standards of progress will result in loss of veteran's educational benefits.

SATISFACTORY PROGRESS STANDARDS FOR VETERANS AND OTHERS ENROLLED UNDER THE VETERAN'S PROGRAM

1. Students receiving veteran's benefits will be placed on academic probation if they fail to maintain the following quality point averages:

End of Quarter	MINIMUM CUMULATIVE Quality Point Average
1	1.50
2	1.75
3 and thereafter	2.00

2. Students will be suspended from receipt of veteran's educational benefits if their cumulative quality point average falls below:
 - a. The minimum requirement indicated above at the end of one quarter on academic probation.
 - b. 1.50 after attempting a minimum of 30 hours.
 3. Students placed on probation or suspension will be informed and counseled by the Veteran's Counselor:
 4. Suspension from receiving veteran's educational benefits is for one quarter. Benefits will be reinstated once the veteran maintains satisfactory progress for one quarter.
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GENERAL STUDENT INFORMATION

CLASS ATTENDANCE*

Regular and punctual class attendance is expected of all students for them to achieve their potential in class and to develop desirable personal traits necessary to succeed in employment. Instructional time missed is a serious deterrent to learning. Students are responsible for fulfilling the requirements of the course by attending and completing course assignments. Arriving late for class, leaving early, or being away without permission during class hours is also a serious interruption of instruction and learning. Students will not be dropped from class for excessive absences and will not be graded directly on attendance; however, grades will be determined on the basis of class performance. An accurate record of class attendance will be kept.

Because of the nature of some learning experiences, especially shops, labs and clinics, it is difficult, if not impossible, to duplicate the work of the class. In some courses, absences or tardiness of an individual may be a major disruption to the performance of others in the class or an inconvenience to other organizations such as hospitals and clinics. For some courses the faculty may develop guidelines for advance notice of absences, makeup of work, etc. Students will be informed of guidelines at the beginning of the course.

It is the joint responsibility of the student and faculty to discuss attendance patterns that will endanger the success of the student in the course. If it appears that a student will not be able to complete a course successfully, the faculty may advise the student to withdraw no later than the official withdrawal date at the end of the eighth week of classes.

* **Class** includes lecture, shop, lab, clinic, etc.

CODE OF STUDENT CONDUCT

Almost 5,000 students, faculty, and staff are part of the A-B Tech family. Every year hundreds of people graduate from the College, and hundreds of new freshmen take their places. To protect all these students and employees from the irresponsible actions of others, the College has adopted basic rules of student conduct.

Students who have been charged with a violation of these rules may be assigned consequences based upon the seriousness of the offense. A hearing will be conducted by the Vice President for Student Services.

Consequences for violations include verbal warnings, written warnings, disciplinary probations, particular consequences adapted to the violation, and suspensions. Any disciplinary decision rendered by the Vice President for Student Services may be appealed through the Student Appeals Policy.

Any student charged with a violation of the Code of Student Conduct will receive a written copy of the charges and an appointment for a hearing. Rights, as they pertain to the hearing, are listed elsewhere in this manual.

The following actions are specifically prohibited on this campus under the Code of Student Conduct:

1. Academic Dishonesty - You may not deceive any official of the College by cheating on any assignment, examination, or paper.

2. Alcoholic Beverages - You may not possess or use alcoholic beverages on campus. You may not be under the influence of alcoholic beverages on campus.

3. Damage to Property - You may not damage the property of the College or of any other person working at or attending the College.

4. Disobedience - You may not disobey the reasonable directions of College employees, including administrators, faculty members, security officers, and other staff employees.

5. Disorderly Conduct - You may not conduct yourself in a way which will interrupt the academic mission of the College or which will disturb the peace of the College.

6. Disruption - You may not disrupt the normal activities of the College by physically or verbally interfering with instruction, meetings, traffic, or scheduled administrative functions.

7. Drugs - You may not possess, use, or be under the influence of any narcotic or illegal drug on campus in violation of the laws of the state of North Carolina or the United States.

8. False Information - You may not present to the College or its employees false information; neither may you knowingly withhold information which may have an effect on your enrollment or your status in the institution and which is properly and legally requested by the College.

9. Fighting - You may not strike or threaten to strike another person for any reason whatsoever. Threatening to strike another person is defined as assault, and striking another person is defined as battery.

10. Gambling - You may not gamble on campus.

11. Possession of Weapons - You may not have a weapon of any kind, including a knife, stun gun, or any firearm in your possession on campus. Law enforcement officers are exempt from this prohibition.

12. Professional Conduct: Various curricula have specific codes of professional conduct for which you may be held accountable if you are enrolled in those curricula.

13. Theft - You may not steal the property of another individual or of the College. Students who are caught stealing will be required to make restitution and may be eligible for civil prosecution as well as College discipline.

14. Public Laws - You may not violate the laws of the state of North Carolina while on campus. Doing so may lead to legal actions as well as campus discipline.

15. Sexual Harassment - You may not sexually harass, either verbally or physically, any member of the College community, including other students, employees, or other persons on the College campus.

RIGHTS OF STUDENTS

If you are accused of a violation of the Code of Student Conduct, A-B Tech guarantees you these rights as the matter is resolved:

1. You have the *right* to a specific written notice of the charges against you.
 2. You have the *right* to know the names of your accusers and to have a copy of all their written statements regarding the charges.
 3. You have the *right* to decide whether your hearing will be public or private.
 4. You have the *right* to a prompt hearing.
 5. You have the *right* to have a counsel of your choice present at the hearing.
-

6. You have the *right* to confront your accusers and to hear all witnesses.
7. You have the *right* to present witnesses or evidence in your own behalf.
8. You have the *right* to remain silent to avoid self-incrimination.
9. You have the *right* to a full and complete record of the hearing.
10. You have the *right* to an appeal.

STUDENT APPEAL POLICY

If you feel that you have been disciplined unfairly or wish to appeal some other decision which you consider to be unjustified, unfair, or a violation of your rights, then you should appeal that decision. In order to appeal the decision, you should use the Student Appeal Policy which is summarized below. A complete copy is available from the Vice President for Student Services in the Azalea Building.

The intention of the Student Appeal Policy is that the faculty member or other employee who has been responsible for the act which you consider to be unfair will attempt, in good faith, to resolve the dispute. You are encouraged to discuss the matter with him or her in an attempt to resolve it. If it is not possible to resolve the matter at this level, then you should bring the matter to the attention of the Vice President for Student Services.

The Vice President will hold an informal session to which you and the employee concerned are invited. Every attempt will be made to resolve the matter at that level, even if multiple sessions are required. If the problem is not resolved, then the Vice President for Student Services will inform you of the formal appeals procedure and provide you with an appeal form.

The appeal form must be filled out and returned to the Vice President for Student Services within five days. The appeal form must be signed by the student and the employee involved. It should also be signed by the supervisor or supervisors of the employee involved up the chain of command through the appropriate Vice President. Each of these supervisors may propose solutions to the disagreement which, if accepted by both parties, will result in resolution of the problem. Failure to reach agreement at any level in the appeal process will require that the matter be taken up to the next higher level.

Particular attention will be made to ensuring that night students can have access to supervisors who are otherwise available during the day hours only.

If the matter remains unresolved through the level of the appropriate Vice President, then you should return to the Vice President for Student Services who will then turn the matter over to the Student Appeals Committee. This Committee, which is composed of two students, two faculty members, a Student Services employee, and a non-teaching professional who will serve as chairperson, is called together by the Vice President for Student Services. The chairperson will conduct the meeting and render a decision which reflects the popular opinion of the Committee. If further appeal is necessary, then the matter is referred to the President. One final appeal would be possible before the Board of Trustees; after that, no appeal is possible.

As stated earlier, a complete copy of this policy is available from the Vice President for Student Services, and you are encouraged to see him or her if you feel that an appeal is necessary.

GRADING SYSTEM

Notice will be given to all students who are failing at mid-term and final grades will be issued at the end of the term to all students. Students will be graded on the achievement of technical skills, ability to work under supervision, interest in work, initiative, and the ability to apply related information. A student who wants to contest a grade must do so within six weeks of the awarding of the grade. A grade cannot be changed after this period without approval by the department, division, and by the Vice President of Instructional Services.

Students will be graded by the following system:

A	90-100	Excellent academic performance, consistent mastery of facts and concepts, and a thorough understanding of course content.
B	80-89	Good academic performance, high-level mastery of course content.
C	70-79	Average academic performance.
D	60-69	Marginal academic performance, poor mastery of course content.
F	Below 60	Very poor performance, no demonstration of even minimal mastery of course content.
CR	Credit - Articulation, CLEP, etc.	
I	Incomplete	
P	Proficiency Credit by Examination	
T	Transfer Credit (External)	
U	Unofficial Withdrawal...Penalty	
W	Official Withdrawal...No Penalty	
X	Continuing	
Y	Audit; See Auditing Courses	
AP	Alternate Proficiency	
NP	Non-Proficiency	

I...Incomplete: Assigned when a student is unable to complete work or take a final examination because of illness or for other reasons over which the student has no control. An "incomplete" must be removed within the first six weeks of the next term. Otherwise, the grade becomes an "F."

U...Given when the student UNOFFICIALLY WITHDRAWS. This is processed as a grade of "F" and will influence the quality point ratio.

W...Given when the student OFFICIALLY WITHDRAWS. This will not influence the quality point ratio.

X...Continuing: Assigned when a student is unable to complete work during the current quarter because of class scheduling over consecutive quarters or at the discretion of the instructor to allow additional time to complete work. A "contract" of conditions for completion and time limit, not to exceed twelve (12) months, will be executed by the instructor and signed by both the instructor and student. If the terms to remove the grade of "X" are not fulfilled by the end of the contract period, the grade will revert to the average held at the beginning of the contract period.

AP and NP. . .Given on an individually approved basis for students who have documented exceptional needs.

PRIVACY OF STUDENT RECORDS

1. In compliance with the Family Educational Rights and Privacy Act of 1974, commonly known as the Buckley Amendment, Asheville-Buncombe Technical Community college will not release information concerning its students except for directory Information, and as stipulated in paragraph 3 below. Directory Information is defined as:
 - a. name
 - b. address
 - c. telephone number
 - d. date of birth and place of birth
 - e. major field of study
 - f. dates of attendance
 - g. degrees received

Directory Information will be released to anyone who asks for it, unless the student specifies in writing to the Registrar's Office that this information is to be withheld. In such cases, no directory information will be released.

2. A student over the age of 18 is considered an "eligible student" within the definition of the law and controls who has access to his or her records. A parent of an eligible student does not automatically have access to the student's records. In order for parents to have access to a student's records, beyond directory information and without written permission from the student, a parent must certify that the student is economically dependent as defined in Section 152 of the Internal Revenue Code of 1954. If a parent can prove dependency to the registrar by showing a copy of the parent's current tax report form or another acceptable report of current dependency, then the parent may have total access to the student's file.
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3. Asheville-Buncombe Technical Community College will release a student's educational records without his or her approval only as follows:
- to Asheville-Buncombe Technical Community College officials who have legitimate educational interest in the records.
 - to officials of another college or university in which a student seeks to enroll.
 - to certain federal and state educational authorities for purposes of enforcing legal requirements in federally supported educational programs.
 - to persons involved in granting financial aid for which the student has applied.
 - to state and local authorities to whom information is required to be disclosed under the provisions of a statute adopted prior to November 19, 1974.
 - to testing, research, and accrediting organizations.
 - in compliance with a court order or lawfully issued subpoena.
 - in very narrowly defined emergencies affecting the health and safety of the student or other persons.
 - to parents of eligible students under the provision of paragraph 2 above.
4. For further information concerning the Federal Educational Rights and Privacy Act, a student may contact the Registrar's Office of Asheville-Buncombe Technical Community College.

COURSE WITHDRAWAL

In order to obtain an official withdrawal or tuition refund, if due, during the first eight weeks of a quarter, a student must complete a *Registration Change Notice* form obtained from the Office of the Registrar. The student must have the form signed by the appropriate instructor(s) and return it to the Office of the Registrar. The student will receive a grade of "W," which will not influence the quality point ratio for the quarter. Any student who ceases to attend classes and does not complete the *Registration Change Notice* form will have a grade of F recorded for the class.

After the eighth week of the quarter, any student who stops attending class will receive a grade of F.

Exceptions such as serious illness or job transfer requiring withdrawal from *all* classes will be considered on an individual basis.

A student who has withdrawn from a class may no longer attend the class.

COLLEGE WITHDRAWAL

Students who withdraw from the college or drop individual courses before the end of the eighth week of the quarter must complete the procedures and forms through the Registrar's Office. A grade of "W" will be assigned. To withdraw from the college after the eighth week (i.e. drop all courses), a student must:

1. Obtain a withdrawal form from the Vice President, Student Services.
 2. Document valid reason(s) for needing to withdraw.
 3. Discuss the need to withdraw with Vice President, Student Services.
-

Students who are approved for late withdrawal from all courses will receive a grade of "W."

Students who must leave the college late and do not wish to drop all courses may request withdrawal from selected courses. Upon approval of the Vice President, Student Services, grades will be assigned by the instructors according to the following guidelines:

1. A grade of "W" may be assigned if the student is passing or the student's progress cannot be evaluated.
2. A grade of "X" (with a signed contract) may be assigned if the instructor agrees that there is a reasonable prospect that the work can be made up and allows the student to do so.
3. A grade of "F" may be assigned if the student is failing.

If an emergency prevents the student from completing the withdrawal process before leaving the campus, the student should call, write or arrange for someone to contact the Vice President, Student Services.

QUALITY POINTS

At the end of each quarter quality points are assigned in accordance with the following formula. (The minimum grade-point ratio for graduation is 2.00 or an average of grade C.)

- A 4 quality points per credit hour
- B 3 quality points per credit hour
- C 2 quality points per credit hour
- D 1 quality point per credit hour
- F no quality points
- I no quality points
- U no quality points
- W ... no quality points

Quality ratings are determined by dividing the total number of quality points by the number of hours attempted. A ratio of 2.00 indicates that a student has an average of C.

GRADES FOR REPEATED COURSES

All failing grades in required courses must be removed before graduation. If a student fails a prerequisite course, it must be repeated successfully before beginning the next course. This could result in the student being enrolled for a longer period than is normally required to complete requirements for graduation.

As any courses are repeated, the new and recorded grades are compared. The higher of these becomes the official grade. Only a grade of *D* or above can replace an existing grade.

Students may be referred to the Admissions Committee for action if their efforts and/or attitudes are such that, in the judgment of their department chairperson, they cannot be successful in their studies.

ACADEMIC STATUS

(Good Standing)

Good standing status permits curriculum enrollment for program course work at the College. Each of the following conditions must be met to be in good standing:

1. Former students must have graduated or be academically eligible to reenter the College.
2. The student has not been suspended for disciplinary reasons.
3. The student has met all financial obligations to the College or has made satisfactory arrangements with the College to do so.

STANDARDS FOR ACADEMIC PROGRESS

(Academic Warning, Probation and Suspension Policy)

Asheville-Buncombe Technical Community College has established this policy to:

- provide students with a warning when they fail to meet minimal academic performance standards;
- limit scheduling when a student's academic performance indicates the necessity for intervention;
- provide a means of preventing and/or terminating prolonged failure.

This policy applies to all students, classified and unclassified.

Students whose grade point average (GPA) falls below the following guidelines are subject to academic warning, which may be followed by probation and suspension.

<u>Hours Completed</u>	<u>Minimum Cumulative GPA</u>
0-9	0.50
10-19	0.75
20-29	1.00
30-39	1.25
40-49	1.50
50-59	1.75
60+	2.00

I. Academic Warning

Students failing to meet the minimum cumulative GPA during any quarter will receive an academic warning. The warning will be mailed by the Registrar's office to the student, and advisors will be notified of the student's status. The warning advises students of their academic status and encourages them to meet with their advisor immediately to examine present academic plans.

II. Probation

Students who fall below the minimum cumulative GPA for two consecutive quarters will be placed on probation, which means the student **will** have restricted scheduling and **must meet with their advisors to do one or more of the following:**

- limit the number of hours attempted;
- schedule preparatory or remedial courses as needed;
- schedule repeat of courses.

III. Suspension

Students who fall below the minimum cumulative GPA guidelines for three consecutive quarters will be placed on academic suspension for one quarter. This means that those students will not be allowed to register for curriculum or precurriculum courses. Continuing Education courses may still be taken.

REENROLLMENT AFTER SUSPENSION

Students may apply for reenrollment after suspension for one quarter. They must contact the Counseling Department to schedule an appointment with a counselor to discuss and develop appropriate plans for their success. The counselor will assign the student to a faculty advisor who will help carry out the plan for academic achievement developed between the student and the Student Services counselor.

DEAN'S LIST

1. Only full-time students are eligible for the Dean's List. (For the Dean's List, students must be enrolled in an academic program, carrying a minimum of 8 credit hours of curriculum courses numbered 100 or above.)
 2. Students must have a minimum 3.50 quality point average to qualify for the quarter under consideration.
 3. Grades of F, I, or X will eliminate a student from the Dean's List for that quarter. Students receiving credit for a course by examination are not affected.
 4. The Dean's List will be compiled by the Registrar, Secretary of Instructional Services, and Department Chairpersons. The draft of candidates will be posted on major bulletin boards for students to review. The Vice President, Instructional Services, will be responsible for final approval and publication.
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DEGREES, DIPLOMAS, AND CERTIFICATES

DEGREE PROGRAMS DEFINED

Asheville-Buncombe Technical Community College confers an Associate in Arts, Associate in Applied Science, or an Associate in Science. These degrees are conferred in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

DIPLOMA PROGRAMS DEFINED

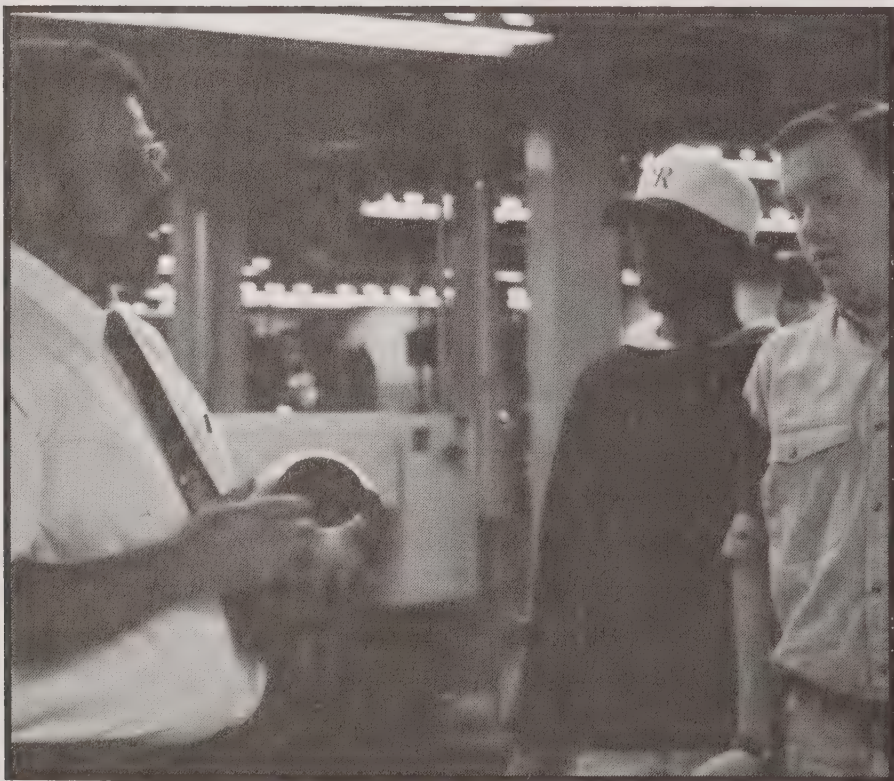
Asheville-Buncombe Technical Community College awards a technical diploma for some programs. This diploma will be awarded in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

Asheville-Buncombe Technical Community College awards a diploma in all one-year vocational curricula. This diploma is granted in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

CERTIFICATES

Certificates may be issued in the name of the Asheville-Buncombe Technical Community College to students who successfully complete designated short-term programs or course sequences.

NOTE: Records of progress are kept on all students. Progress records are furnished to any student or graduate upon written request.



An explanation makes the technology understandable.

REQUIREMENTS FOR GRADUATION

The College holds one graduation ceremony each year. This will normally be the last Friday evening in August. To graduate with a diploma or degree, students must meet the following minimum requirements:

1. Complete the requirements of a College approved program of study according to the student's official catalog. The official catalog is determined by the student in consultation with the academic advisor and must be a College catalog dated no more than five years prior to the date of graduation. For example, a student who is applying for graduation in August, 1995 (94-95 College year), must have completed a program of study according to a catalog dated 1994, 1993, 1992, 1991 or 1990. Under no circumstances can a student select a catalog which was in effect prior to the student's admission to his/her program of study. The student must document the official catalog selected on the Application for Graduation.
2. Each course in the program of study must be completed by one of the following methods:
 - a. Take the course at A-B Tech.
 - b. Receive transfer credit.
 - c. Take an A-B Tech proficiency exam.

At least half of the credit hours in a program of study must be received at this College by taking courses and/or proficiency examinations.

3. Earn a grade of at least C in each course in the major and a minimum average of 2.0 (C) quality points on course work presented for graduation. Students completing their study with a grade point average of 4.0 will graduated with highest honors. Those who have a minimum average of 3.75 will be graduated with high honors and a minimum of 3.50 has the distinction of honors. The student must assume primary responsibility for assuring that all requirements for graduation are met.
4. Submit an application for graduation to the Bookstore before the published deadline date. Purchase caps, gowns, and diplomas. (Prices may vary from year to year and do not include the purchase of optional items such as invitations or billfold diplomas.)
5. Be in good standing; fulfill all financial obligations to the College; library clearance is also required.
6. Be present for graduation and attired in the proper academic robe. (Students who cannot attend graduation must submit to the President a written request to be excused two weeks prior to graduation.)

CAMPUS SERVICES

LRC

The LRC provides a variety of services. A coin-operated copier and a microfiche/microfilm reader/printer are available. The LRC also provides typewriters and computers free of charge.

Interlibrary loan service is available through computer connections with other libraries. For the convenience of students, a number of routine library functions are now automated. The LRC has electronic indexes, such as NEWSBANK and PROQUEST, as well as an automated catalog to the collection and automated circulation. These services are available during regular operating hours. Individuals with disabilities will be assisted and accommodated by LRC/Library staff.

DENTAL CLINIC

The Allied Dental Department provides oral health services, such as cleaning the teeth, dental X-rays, nutritional counseling, and patient education. A nominal fee is charged for these services. Call the Dental Clinic, extension 255, for an appointment and charges for services.

BOOKSTORE

A bookstore is operated by the College for the convenience of students and staff members to provide required textbooks and materials. Students should plan to purchase all texts and materials at the beginning of each quarter.

Textbook costs vary considerably depending upon the curriculum and quarter. Book costs also vary from year to year because of changes in curriculum book prices, texts, and material requirements. Texts and materials will be made available in alternative accessible formats for individuals with disabilities upon request to the ADA Coordinator.

Applications for Graduation/Cap and Gown Order Forms are collected by the bookstore in April. Graduation fees are due in May. Graduation invitations are also available in the bookstore.

CHILD CARE

Asheville-Buncombe Technical Community College offers child care services for children of College students. Faculty, staff, and the general public may also apply for the service.

The Center, operated by Buncombe County Child Development, is open both during day and evening hours.

The day program accepts children from 2 months to 5 years. The evening program will care for the older child as well. An evening meal is provided. Individuals who meet State and Federal income guidelines may apply for financial assistance.

Arrangements can be made by calling either 255-5725 or 255-5111 from 8:30 a.m. to 5:00 p.m. Monday through Friday.

COLLEGE CLOSING OR DELAYED OPENING

The College will either be closed or opened on a delayed schedule when inclement weather conditions warrant a decision. Closing or delaying announcements will be made on Asheville radio and television stations and some surrounding community radio stations. Individual announcements are made for the day and evening programs. Students may phone the switchboard if they live in areas where local radio and television stations are not received.

FOOD SERVICES

Food service is available in the Oak Gym/Student Center. Breakfast and lunch meals, including sandwiches, salads, and soups, are prepared daily. Hours of operation are from 7:00 a.m. to 2:00 p.m.

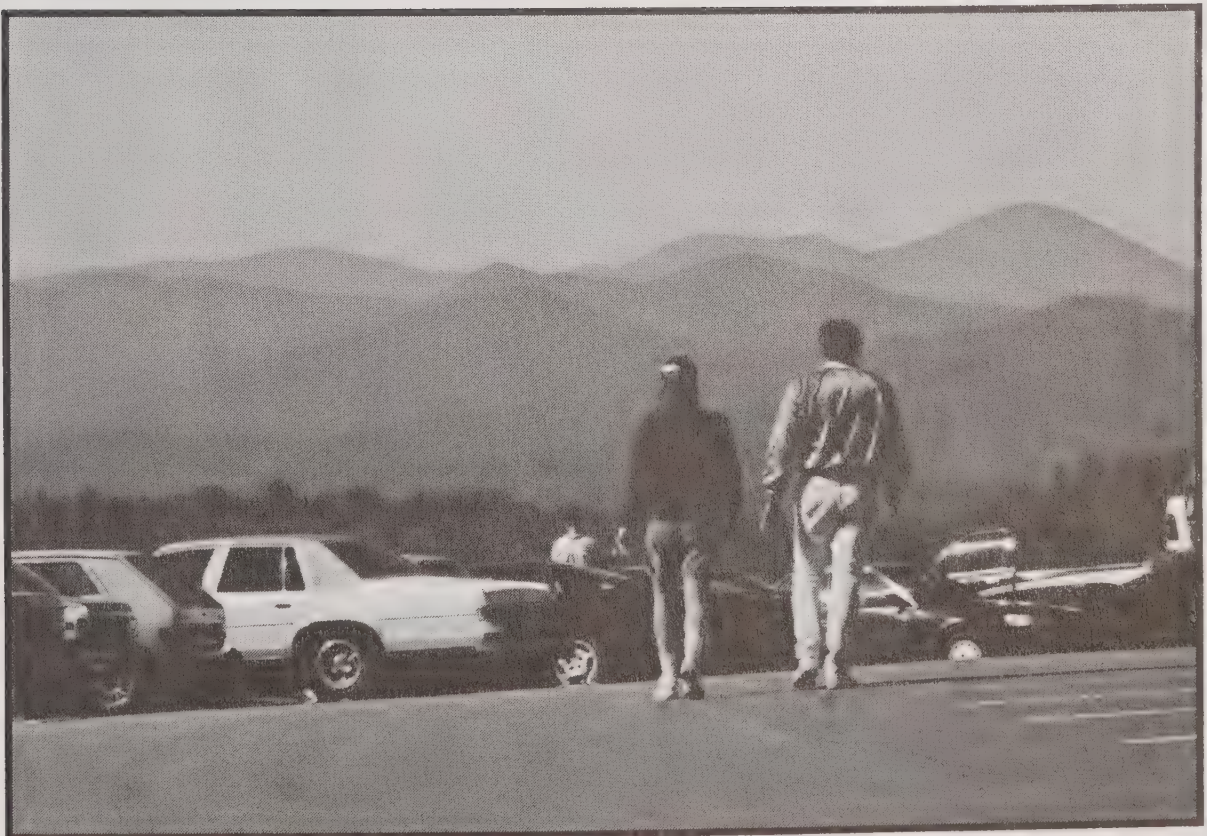
Vending machines dispensing soft drinks, coffee, and snacks are located at various locations around campus.

The Culinary Technology and Hotel and Restaurant Management students serve lunch on scheduled Thursdays during Fall, Winter, and Spring quarters. See the student newspaper, A-B Tech Expressions, for times, dates, and reservation information.

PARKING LOCATIONS

Parking is provided at various locations around campus. Please refer to the campus map located in this catalog for specific sites. Students with disabilities are provided at all locations. Parking areas are lighted during evening hours.

Spaces marked with yellow lines are reserved for faculty, staff, disabled persons, and visitors. White-lined spaces are reserved for students.



Even A-B Tech's parking lots are beautiful.

RECREATION CENTER

A recreation center is located in the Oak Gym/Student Center for those students with spare time and who wish to play coin-operated video games or billiards.

SECURITY

Security personnel are on duty 24 hours a day, seven days a week. Each security officer is certified to respond to medical emergencies.

STUDENT HOUSING

Students are responsible for their own living accommodations. A-B Tech neither approves nor maintains housing facilities. Students who are looking for housing or roommates may check bulletin boards in the Azalea Building or the Oak Gym/Student Center.

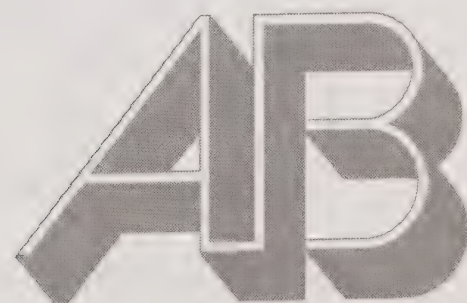
PLACEMENT SERVICE

No reputable college can guarantee jobs for graduates. However, the College will assist students and alumni in every possible way to obtain suitable employment. The College provides placement service for both full-time and part-time jobs through the Placement Office, which is located in the Oak Gym/Student Center.



Thumbs up.

CAREER PROGRAMS



ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	Associate Degree Nursing	Dental Assisting	Dental Hygiene
Recommended High School Courses	Algebra II Adv. Biology Composition Courses in Health Occupations Anatomy/ Physiology Keyboarding	Chemistry Advanced Biology Courses in Health Occupations Keyboarding	Anatomy/ Physiology Plane Geometry (or Algebra II) Advanced Biology Courses in Health Occupations Keyboarding
A-B Tech Entrance Requirements	Chemistry Biology English (4 units) Mathematics (2 units, one unit must be Algebra) <i>Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computer- ized Placement Tests (CPT).</i> <i>See Selection Criteria and Procedures for Allied Health Programs brochure for full details.</i>	<i>Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arith- metic Skills, College Board Computerized Placement Tests (CPT).</i> <i>See Selection Criteria and Procedures for Allied Health Programs brochure for full details.</i>	Chemistry Biology English (4 units) Mathematics (2 units: one must be Algebra) <i>Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computer- ized Placement Tests (CPT).</i> <i>See Selection Criteria and Procedures for Allied Health Programs brochure for full details.</i>
Program Schedule	Day Begins Fall	Day Begins Fall	Day Begins Fall
Degree	Associate in Applied Science	A diploma is awarded.	Associate in Applied Science
Employment Opportunities	Hospitals Long Term Care Facilities Clinics Physicians Offices Industry Community Health Agencies	V.A. Clinics Health Depts. State Clinics Dental Schools Private & Group Practices Clinics	Dental Offices Education Local, State, & Federal Govt. Agencies Private Industry

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	Early Childhood Associate	Emergency Medical Science	Law Enforcement Technology
Recommended High School Courses	Composition Literature Keyboarding Courses in Childcare Occupations	Anatomy Biology Mathematics Chemistry Composition Courses in Health Occupations	English courses particularly those with emphasis on writing skills
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	<i>Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).</i> See <u>Selection Criteria and Procedures for Allied Health Programs</u> brochure for full details.	Acceptable scores on SAT, ACT, or Reading Compre- hension, Sentence Skills, Arithmetic Skills, College Board Computer- ized Placement Tests (CPT).
Program Schedule	Day Begins Fall Selected classes are available in the Evening	Day Begins Fall	Day/Night Begins Fall Can take single courses any quarter
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Child Care Worker Day Care Worker Child Care Assistant Director, Day Care Director, Preschool	Emergency Medical Services Hospitals Emergency Care Clinics Health Depts. Doctor's Offices General Clinics Private Ambu- lance Companies	Local Law Enforcement Highway Patrol Deputy Sheriff Private Security

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	Medical Laboratory Technology	Practical Nursing	Radiography (Radiologic Technology)
Recommended High School Courses	Anatomy Biology (strongly recommended) Geometry (strongly recommended)	Anatomy/ Physiology Adv. Biology English Composition Courses in Health Occupations Keyboarding	Anatomy Advanced Biology Applied Math Physics (strongly recommended) Keyboarding
A-B Tech Entrance Requirements	Chemistry Algebra I English (4 units) <i>Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).</i> <u>See Selection Criteria and Procedures for Allied Health Programs</u> brochure for full details.	Mathematics Biology <i>Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).</i> <u>See Selection Criteria and Procedures for Allied Health Programs</u> brochure for full details.	Biology Algebra I <i>Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).</i> <u>See Selection Criteria and Procedures for Allied Health Programs</u> brochure for full details.
Program Schedule	Day Begins Fall	Day Begins Fall	Day Begins Fall
Degree	Associate in Applied Science	A diploma is awarded.	Associate in Applied Science
Employment Opportunities	Hospitals Emergency Care Clinics, Health Departments Doctor's Offices General Clinics	Hospitals Long-Term Care Facilities Physicians' Offices Industry Community Health Agencies	Hospitals Health Depts. Doctors Offices Emergency Care Clinics Industry Imaging Centers

Continued on next page

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	Social Service Associate
Recommended High School Courses	Composition Literature Keyboarding Courses in Sociology Psychology
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day begins Fall Selected classes are available in the evening.
Degree	Associate in Applied Science
Employment Opportunities	Case Aide, Social Service Social Worker Aide

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

The Allied Health and Public Service Education division offers a variety of programs designed to meet the increasing demand for specialized professionals in the burgeoning health care, child care, and public service industries. The programs in this division present a broad range of career options for individuals desiring a career in a helping profession. The division offers a variety of Associate in Applied Science degree programs, as well as, diploma and certificate programs. Some areas of study are offered on a day and evening basis.

In addition to classroom and laboratory instruction, each program emphasizes learning experiences at health and public service settings in the community. This extensive training at clinical, pre-hospital, laboratory, child care, or law enforcement facilities affords students a unique opportunity to develop the specialized skills required for employment in a health or public service profession.

An individual desiring training in a health or public service program should have a background in science, chemistry, biology, social sciences, and mathematics. The applicant to an area of study in this division should become familiar with the selection criteria and application deadlines for the specific program. Persons interested in a health or public service career are advised that professional licensure, certification, or employment may be denied to anyone who has been convicted of a felony or other crime involving moral turpitude.

A.A.S. DEGREE CONFERRED

Associate Degree Nursing
Dental Hygiene
Early Childhood Associate
Emergency Medical Science
Law Enforcement Technology
Medical Laboratory Technology
Radiography (Radiologic Technology)
Social Service Associate

DIPLOMA AWARDED

Dental Assisting
Practical Nursing

CERTIFICATE AWARDED

Basic Law Enforcement Technology
Early Childhood Associate
Phlebotomy

ASSOCIATE DEGREE NURSING

The Associate Degree Nursing curriculum is designed to prepare graduates to integrate the principles and theories of nursing and the sciences in utilizing the nursing process in the practice of nursing. The practice of nursing by associate degree nursing graduates consists of: assessing the patient's physical and mental health, including the patient's reaction to illness and treatment regimens; recording and reporting the results of the nursing assessment; planning, initiating, delivering, and evaluating appropriate nursing acts; teaching, delegating and supervising other personnel in implementing the treatment regimen; collaborating with other health care providers in determining the appropriate health care for a patient; implementing the treatment and pharmaceutical regimen prescribed by any person authorized by State law to prescribe such a regimen; providing teaching and counseling about the patient's health care; reporting and recording the plan for care, nursing care given, and the patient's response to that care; and supervising, teaching, and evaluating those who perform or are preparing to perform nursing functions.

Graduates are eligible to take the National Council Licensure Examination (NCLEX-RN) which is required for practice as a registered nurse.

Individuals desiring a career in registered nursing should take biology, algebra and chemistry courses prior to entering the program.

Job Opportunities

Registered Nurse (R.N.)

Specific Entrance Requirements

1. General college admission requirements.
 2. Have high school credit with grade of at least "C" for four units of English, two units of mathematics one of which must be algebra, chemistry, and biology.
 3. Keyboarding skills are strongly recommended.
 4. Final acceptance is contingent upon documentation of completion of required immunizations and satisfactory physical and mental health as indicated on the completed examination report. The physical examination must be completed within 90 days of entry into the first nursing class.
 5. Documentation of current infant, child, adult CPR certification by entry date into first NUR course.
 6. The North Carolina Board of Nursing may deny license to individuals *convicted of a felony or any other crime involving moral turpitude*.
 7. Entry into any quarter by transfer or other means except during first quarter is based upon approval by the Department chairperson and availability of space.
 8. Licensed practical nurses applying for admission in the program must do so through the regular admission process. They must also take NUR 100 Transition to Associate Degree Nursing before taking NUR 105.
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ASSOCIATE DEGREE NURSING

Associate in Applied Science Degree

This Program Consists of:	Credit
Major Courses (NUR Prefixed Courses)	Hrs.
Related and General Education Courses	76
Including:	43
Communications	6
Humanities/Fine Arts	3
Natural Sciences/Mathematics	19
Social Science	12
Other	3
Electives	<u>5</u>
TOTAL	124

				Hrs. Per Week			Credit
				Class	Lab	Clinic	Hrs.
First Quarter (Fall)							
+	NUR	101	Fundamentals of Nursing I	3	6	0	6
	BIO	101	Human Anatomy and Physiology I	4	3	0	5
	CHM	101	Fundamentals of Physiological Chemistry	3	2	0	4
	NUT	101	Nutrition	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
				13	11	0	18
Second Quarter (Winter)							
++	NUR	103	Fundamentals of Nursing II	5	0	9	8
	BIO	102	Human Anatomy and Physiology II	4	3	0	5
	PSY	101	Introduction to Psychology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
				12	3	9	16
Third Quarter (Spring)							
	NUR	105	Fundamentals of Nursing III	5	0	9	8
	BIO	103	Microbiology	4	3	0	5
	PSY	203	Abnormal Psychology	3	0	0	3
	ENG	150	Grammar and Composition	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
				15	3	9	19
Fourth Quarter (Summer)							
	*NUR	206	Psychiatric Nursing	4	0	6	6
	*NUR	207	Maternity Nursing	4	0	6	6
	PSY	105	Human Growth and Development	3	0	0	3
	SOC	201	Social Problems	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
				14	0	12	18
Fifth Quarter (Fall)							
	NUR	210	Medical Surgical Nursing I	7	0	15	12
	ENG	151	Composition and Introduction to Literature	3	0	0	3
	**ELECTIVE(S)			<u>5</u>	<u>0</u>	<u>0</u>	<u>5</u>
				15	0	15	20
Sixth Quarter (Winter)							
	NUR	211	Nursing Seminar I	3	0	0	3
	NUR	212	Medical Surgical Nursing II	7	0	15	12
	ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
				13	0	15	18

Seventh Quarter (Spring)

NUR	213	Nursing Seminar II	0	2	0	1
NUR	214	Medical Surgical Nursing III	<u>8</u>	<u>0</u>	<u>18</u>	<u>14</u>
			8	2	18	15
Program Totals			90	19	78	124**

Nursing courses required as prerequisites must be passed with a minimum grade of "C" before progressing to the next course.

*Mini-Courses

**The credit hours total includes the minimum of five (5) credit hours of non-major electives which must be taken before graduation in addition to the stated required courses.

+Licensed practical nurses receive credit for the course.

++Licensed practical nurses receive credit for the course upon completion of the transition course NUR 100.

Selected courses from this program are also offered in the evening schedule.

BASIC LAW ENFORCEMENT TRAINING

The Basic Law Enforcement Training curriculum certificate program prepares individuals to take the Basic Training Law Enforcement Officers certification examination mandated by the North Carolina Criminal Justice Education and Training Standards Commission and/or prepares individuals to take the Justice Officers Basic Training certification examination mandated by the North Carolina Sheriffs' Education and Training Standards Commission. Successful completion of this curriculum certificate program requires that the student satisfy the minimum requirements for certification by the Criminal Justice Commission and/or the Sheriffs' Commission. The student satisfactorily completing this program should possess at least the minimum degree of general attributes, knowledge, and skills to function as an inexperienced law enforcement officer.

Job opportunities are available with state, county, and municipal governments in North Carolina. In addition, knowledge, skills, and abilities acquired in this course of study qualify one for job opportunities with private enterprises in such areas as industrial, retail, and private security.

Job Opportunities

College or University Officer
Deputy Sheriff
Industrial Security Officer
Investigator

Police Officer
Park Security Officer
Private Security Officer
Retail Security Officer

Specific Entrance Requirements

1. Submit a College application at Admissions Office.
 2. Individual must meet the Minimum Standard for Employment Criteria outlined in North Carolina Code Book--General Statute 17-A and Title-12 Chapter 9 North Carolina Administrative Code.
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3. Individuals must be sponsored by a North Carolina law enforcement agency. The letter of sponsorship must:
 - a. be signed by the agency head; i.e. Chief or Sheriff
 - b. include a statement of sponsorship that certifies that the applicant meets the standards for certification as stated in number two above.
 - c. state that a background investigation was conducted.
4. Individuals must submit their sponsorship letter and college application to the Law Enforcement Training Center director at least fifteen days prior to the courses scheduled start date. Applicants are accepted on a first-come, first-serve basis. Priority will be given to full-time employees of law enforcement agencies.
5. If accepted into the program the student must submit completed North Carolina State Forms F-1 and F-2 on the first day of class. These forms are provided by the sponsoring agency and are not available at the College.

Conditions of Enrollment

Basic Law Enforcement Training is offered as a unit. It cannot be completed by portions but must be completed in its entirety. State law mandates 100 percent attendance. The School Director can authorize absences for emergencies. These absences must be made up before the completion of the quarter. If absences exceed 10 percent for any reason, the student is automatically excluded from further attendance and must complete another offering of Basic Training in its entirety.

BASIC LAW ENFORCEMENT TRAINING
Certificate Awarded

			Hrs. Per Week			Credit
			Class	Lab	Skills	Hrs.
Offered on Demand						
BLE	100	Basic Law Enforcement	<u>16</u>	<u>0</u>	<u>30</u>	<u>26</u>
			16	0	30	26

This program is also offered in the evening schedule. See Evening Programs listing.

DENTAL ASSISTING

The Dental Assisting curriculum prepares graduates to assist the dentist in providing treatment services. Functions performed by the dental assistant include dental health teaching, preparing dental materials to be used, preparing the patient, taking dental X-rays, caring for dental supplies and equipment, passing instruments and materials to the dentist, making appointments, maintaining patient records, and other office management procedures. Graduates may practice in dental settings, such as dentists' offices, dental clinics, public health clinics, federal service clinics, dental schools, and state health departments.

This curriculum prepares the graduate for certification as a Certified Dental Assistant by the Certifying Board of the Dental Assisting National Board, Incorporated.

Individuals desiring a career in dental assisting should, if possible, take biology, mathematics, and keyboarding courses prior to entering the program.

Job Opportunities

Dental Assistant

Specific Entrance Requirements

1. General college admission requirements.
2. Keyboarding skills are strongly recommended.
3. Acceptable reports of medical and dental examinations by first day of class.
4. Completion of required immunizations by first day of class, including first two doses of hepatitis B vaccine.
5. Certification in Community CPR within three months of entering program.

DENTAL ASSISTING Diploma

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
DEN	1103	Dental Materials I	2	4	0	4
DEN	1120	Clinical Science I	3	6	0	6
DHY	101	Head, Neck, and Oral Anatomy	3	4	0	5
BIO	1109	Biomedical Sciences	<u>4</u>	<u>2</u>	<u>0</u>	<u>5</u>
			12	16	0	20
Second Quarter (Winter)						
DEN	1122	Dental Materials II	2	2	0	3
DEN	1123	Oral Health Education	2	4	0	4
DEN	1130	Clinical Science II	3	2	3	5
DHY	103	Dental Radiology	3	4	0	5
ENG	101	Fundamentals of English	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			13	12	3	20
Third Quarter (Spring)						
DEN	1125	Dental Affiliation I	1	0	12	5
DEN	1126	Dental Sciences	5	0	0	5
DEN	1131	Dental Office Management	3	2	0	4
DHY	112	Dental Office Emergencies	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			12	2	12	17
Fourth Quarter (Summer)						
DEN	1135	Dental Affiliation II	1	0	18	7
DEN	1141	Professional Development	2	0	0	2
ENG	204	Oral Communications	3	0	0	3
PSY	206	Applied Psychology	3	0	0	3
(PSY	101)	Introduction to Psychology	<u>(3)</u>	<u>(0)</u>	<u>(0)</u>	<u>(3)</u>
			9	0	18	15
Program Totals			46	30	33	72

Selected courses from this program are also offered in the evening schedule.

DENTAL HYGIENE

The Dental Hygiene curriculum prepares graduates to take patient histories, teach oral hygiene, clean teeth, take X-rays and apply preventive agents under the supervision of a dentist. Dental hygienists may be employed in dentists' offices, clinics, schools, public health agencies, industry, and educational institutions.

Graduates are eligible to take the Dental Hygiene National Board written examination, which is administered by the American Dental Association, Joint Commission on National Dental Examinations; and the State Board Clinical Examination, which is administered by the North Carolina Board of Dental Examiners. A passing grade on both examinations is required for practice as a Registered Dental Hygienist in North Carolina.

Individuals desiring a career in Dental Hygiene should take biology, algebra, and chemistry courses prior to entering the program.

Job Opportunities

Dental Hygienist

Specific Entrance Requirements

1. General college admission requirements.
2. Have high school credit with grade of at least "C" for four units of English, two units of mathematics (one of which must be algebra), one unit of chemistry and one unit of biology. Science oriented college preparatory courses are recommended.
3. Keyboarding skills are strongly recommended.
4. Acceptable reports of medical and dental examinations by first day of class.
5. Completion of required immunizations by first day of class, including first two doses of hepatitis B vaccine.
6. Certification in Community CPR within three months of entering program.
7. The North Carolina Board of Dental Examiners may deny license to individuals convicted of a felony or any other crime involving moral turpitude.

DENTAL HYGIENE

Associate in Applied Science Degree

	Credit Hrs.
This Program Consists of:	
Major Courses (DHY Prefixed Courses)	80
Related and General Education Courses	40
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	19
Social Science	6
Other	--
Electives	<u>3</u>
TOTAL	123

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Clinic	
First Quarter (Fall)						
DHY	101	Head, Neck and Oral Anatomy	3	4	0	5
DHY	110	Pre-Clinical Dental Hygiene I	3	6	0	6
BIO	101	Human Anatomy and Physiology I	4	3	0	5
ENG	101	Fundamentals of English	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			13	13	0	19
Second Quarter (Winter)						
DHY	103	Dental Radiology	3	4	0	5
DHY	111	Pre-Clinical Dental Hygiene II	3	6	0	6
BIO	102	Human Anatomy and Physiology II	4	3	0	5
CHM	101	Fundamentals of Physiological				
		Chemistry	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			13	15	0	20
Third Quarter (Spring)						
DHY	106	Oral Embryology and Histology	2	0	0	2
DHY	112	Dental Office Emergencies	3	0	0	3
DHY	116	Dental Hygiene I	1	0	0	1
DHY	117	Dental Hygiene Clinic I	0	0	9	3
DHY	206	Dental Materials	3	4	0	5
BIO	103	Microbiology	<u>4</u>	<u>3</u>	<u>0</u>	<u>5</u>
			13	7	9	19
Fourth Quarter (Summer)						
DHY	114	General and Oral Pathology	3	0	0	3
DHY	118	Dental Hygiene II	3	0	0	3
DHY	119	Dental Hygiene Clinic II	0	0	12	4
ENG	102	Composition	3	0	0	3
PSY	101	Introduction to Psychology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			12	0	12	16
Fifth Quarter (Fall)						
DHY	205	Periodontology	3	0	0	3
DHY	216	Dental Hygiene III	3	0	0	3
DHY	217	Dental Hygiene Clinic III	0	0	12	4
DHY	221	Pharmacology	3	0	0	3
SOC	201	Social Problems	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			12	0	12	16
Sixth Quarter (Winter)						
DHY	203	Community Dental Health I	3	2	0	4
DHY	218	Dental Hygiene IV	2	0	0	2
DHY	219	Dental Hygiene Clinic IV	0	0	15	5
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			8	2	15	14
Seventh Quarter (Spring)						
DHY	222	Community Dental Health II	1	0	3	2
DHY	223	Dental Ethics and Jurisprudence	3	0	0	3
DHY	224	Dental Hygiene Clinic V	0	0	15	5
ENG	103	Report Writing	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			7	0	18	13
Program Totals			78	37	66	123*

Selected courses from this program are also offered in the evening schedule.

**The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.*

EARLY CHILDHOOD ASSOCIATE

The Early Childhood Associate curriculum prepares individuals to work with programs and/or centers concerned with the care and development of infants and young children. Through study and application in such areas as child growth and development, physical and nutritional needs of children, care and guidance of children and communication with children and their parents, individuals will be able to function effectively in various programs and/or centers dealing with preschool children.

Job opportunities are available in such areas as day care centers, nursery schools, kindergartens, child development centers, hospitals, rehabilitation clinics, evaluation clinics, camps and recreational centers.

Job Opportunities

Entry Level

Child Care Worker
Day Care Worker
Child Care Assistant

Advanced Level

Director, Day Care
Director, Preschool

Specific Entrance Requirements

1. General college admission requirements.
2. Acceptable reports of medical examination by the first day of class.
3. Three character/employment references by the first day of class.
4. According to GS 110-91, "No person shall be an operator of nor an employee in a day care facility who has been convicted of a crime involving child neglect, child abuse, or moral turpitude, or who is a habitually excessive user of alcohol or who illegally uses narcotics or other impairing drugs, or who is mentally retarded or mentally ill to an extent that may be injurious to children."

NOTICE

Students should be aware that individuals convicted of child abuse or neglect or any crime involving moral turpitude may be denied employment in child care.

EARLY CHILDHOOD ASSOCIATE **Associate in Applied Science Degree**

This Program Consists of:	Credit
	Hrs.
Major Courses (EDU Prefixed Courses)	64
Related and General Education Courses	42
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	5
Social Science	9
Other	13
Electives	<u>3</u>
TOTAL	109

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
EDU	101	Introduction to Early Childhood Education: Child Care Credential I	3	0	0	3
EDU	112	Infant/Toddler Development and Activities	3	0	0	3
EDU	115	Child Development I	3	0	0	3
ENG	101	Fundamentals of English	3	0	0	3
PSY	101	Introduction to Psychology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			15	0	0	15
Second Quarter (Winter)						
EDU	102	Introduction to Early Childhood Education: Child Care Credential II	3	0	0	3
EDU	106	Health, Safety, and Nutrition in Early Childhood	4	2	0	5
EDU	116	Child Development II	3	0	0	3
EDU	121	Seminar Practicum - Child Care I	2	0	10	3
ENG	102	Composition	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			15	2	10	17
Third Quarter (Spring)						
EDU	104	Creative Activities in Early Childhood	4	2	0	5
EDU	107	Communication in Early Childhood	4	0	0	4
EDU	111	Working with Parents and Families	3	0	0	3
EDU	117	Child Development III	3	0	0	3
EDU	122	Seminar Practicum-Child Care II	<u>2</u>	<u>0</u>	<u>10</u>	<u>3</u>
			16	2	10	18
Fourth Quarter (Summer)						
EDU	110	Exploration Activities in Early Childhood	5	3	0	6
CAS	101	Intro to Computing Concepts	2	2	0	3
PSY	201	Child Psychology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			10	5	0	12

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Fifth Quarter (Fall)						
BIO	111	Basic Life Sciences	5	0	0	5
EDU	200	Behavior Management	3	0	0	3
EDU	202	Children With Special Needs	3	0	0	3
EDU	201	Early Childhood Skill Development: Communications	5	0	0	5
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			19	0	0	19
Sixth Quarter (Winter)						
EDU	203	Early Childhood Curriculum Planning	4	0	0	4
EDU	222	Seminar Practicum-Special Needs	2	0	10	3
ENG	103	Report Writing	3	0	0	3
ENG	260	Children's Literature	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			12	0	10	13
Seventh Quarter (Spring)						
EDU	204	Program Administration	3	0	0	3
EDU	225	Early Childhood Internship	2	0	20	4
PED	177	CPR/First Aid and Safety	1	2	0	2
SOC	201	Social Problems	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			9	2	20	12
Program Totals			96	11	50	109*

Total Credit Hours Required for Degree: 109

*The credit hours total includes the minimum of three (3) credit hours of non-major electives which must be taken before graduation in addition to the stated required courses.

Total Credit Hours Required for Certificate: 20

Required courses for Certificate program: EDU 101, EDU 102, EDU 104, and nine (9) additional credit hours selected from EDU courses offered.

EMERGENCY MEDICAL SCIENCE

The Emergency Medical Science curriculum is designed to prepare graduates, while under the direct supervision of a physician or mobile intensive care nurse, to perform patient assessments and render emergency care in the pre-hospital and hospital setting. Students will learn basic and advanced life support skills through a combination of classroom teaching, with practice in laboratory sessions and clinical experience, with emergency medical services, and community hospitals.

As students progress through the curriculum, they become eligible to take certifying examinations for EMT, EMT-D, EMT-I, EMT-AI and EMT-P given by the North Carolina Office of Emergency Medical Services and/or the National Registry of Medical Technicians.

Graduates may be employed in ambulance or rescue squad services, flight transport services, specialty care areas of hospitals, industry, medical supply companies, educational institutions, and governmental agencies.

Individuals desiring a career in emergency medical science should take biology and mathematics. It would be beneficial to have had chemistry prior to entering the program.

Job Opportunities

Ambulance Attendant
Emergency Medical Technician
Emergency Medical Technician - Defibrillator
Emergency Medical Technician - Intermediate
Emergency Medical Technician - Advanced Intermediate
Emergency Medical Technician - Paramedic
E.M.S. Manager/Director
E.M.S. Training Officer/Instructor

Specific Entrance Requirements

1. General college admission requirements.
2. Must be 18 years of age at the end of the first quarter of the program.
3. Current N.C. driver's license.
4. Acceptable reports of medical examinations and immunizations.
5. Character/employment references (three).

NOTICE

Students should be aware of the following:

1. The North Carolina Office of Emergency Medical Services requires the "candidate to be physically fit and free from physical defects, handicaps, or diseases" which might impair ability to drive, attend an ambulance, and/or perform any duties prescribed by OEMS.
2. The North Carolina Office of Emergency Medical Services may deny certification to individuals convicted of a felony or any other crime involving moral turpitude.

EMERGENCY MEDICAL SCIENCE
Associate in Applied Science Degree

	Credit Hrs.
This Program Consists of:	
Major Courses (EMS Prefixed Courses)	83
Related and General Education Courses	42
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	10
Social Science	9
Other	8
Electives	<u>3</u>
TOTAL	128

		Hrs. Per Week			Credit Hrs.
		Class	Lab	Clinic	
First Quarter (Fall)					
(B) EMS101	Fundamentals of EMS	7	6	0	9
BIO 101	Human Anatomy & Physiology I	4	3	0	5
PSY 101	Introduction to Psychology	3	0	0	3
PED170	Fit and Well for Life	<u>1</u>	<u>2</u>	<u>0</u>	<u>2</u>
		15	11	0	19
Second Quarter (Winter)					
(I) EMS104	Injury Management I	4	3	0	5
(I) EMS105	Clinical Seminar & Practicum I	0	0	9	3
(P) EMS112	Emergency Communications, and Record Keeping	2	2	0	3
(I/A/P) EMS 204	Adjuncts for Airway Control and Ventilation	2	0	0	2
BIO 102	Human Anatomy & Physiology II	<u>4</u>	<u>3</u>	<u>0</u>	<u>5</u>
		12	8	9	18
Third Quarter (Spring)					
EMS 216	Fundamentals of Public Safety	3	2	0	4
(A/P) EMS 106	Introduction to Pharmacology	2	2	0	3
(A/P) EMS 108	Clinical Seminar & Practicum II	0	0	9	3
ENG 101	Fundamentals of English	3	0	0	3
PSY 203	Abnormal Psychology	3	0	0	3
LET 100	Defense Tactics for E.M.S.	<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>
		13	6	9	19
Fourth Quarter (Summer)					
(P) EMS 110	Pharmacology for EMS	3	2	0	4
(A/P) EMS 111	Clinical Seminar & Practicum III	0	0	9	3
(A/P) EMS 113	Emergency Vehicle Operation	2	2	0	3
(A/P) EMS 201	Advanced Life Support I - Cardiac	3	3	0	4
ENG 102	Composition	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
		11	7	9	17
Fifth Quarter (Fall)					
(P) EMS 202	Clinical Seminar & Practicum IV	0	0	9	3
(P) EMS 203	Emergency Psychiatric Care	3	0	0	3
(P) EMS 208	Advanced Life Support II-Trauma	2	2	0	3
(P) EMS 210	Advanced Life Support III-Medical	2	2	0	3
(P) EMS 213	Hazardous Materials & Disaster	2	2	0	3
PHI 101	Ethics and Human Values	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
		12	6	9	18
Sixth Quarter (Winter)					
(P) EMS 206	Clinical Seminar & Practicum V	0	0	9	3
(P) EMS 207	OB, Newborn, and Pediatric Emergencies	4	2	0	5
ENG 204	Oral Communications	3	0	0	3
SOC 201	Social Problems	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
		10	2	9	14
Seventh Quarter (Spring)					
(P) EMS 103	Principles of Extrication & Rescue	3	4	0	4
(P) EMS 211	Clinical Symposium	3	2	6	6
EMS 215	EMS Personnel Management	4	0	0	4
ENG 103	Report Writing	3	0	0	3
CAS 101	Introduction to Computing Concepts	<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>
		15	8	6	20
Program Totals		88	48	51	128*

All courses are required for the A.A.S. degree.

B Required for Basic EMT Certification

I Required for Intermediate EMT Certification

A Required for Advanced Intermediate Certification

P Required for Paramedic Certification

*The credit hours total includes the minimum of three (3) credit hours of non-major electives which must be taken before graduation in addition to the stated required courses.

Selected courses from this program are also offered in the evening schedule.

LAW ENFORCEMENT TECHNOLOGY

The Law Enforcement Technology curriculum prepares individuals for a career in the law enforcement services occupations field and other allied occupations. Law enforcement occupations require a thorough understanding of criminal behavior, criminal investigation, interpersonal communications, law, patrol operations, psychology, sociology, traffic management and other aspects of law enforcement administration and operations.

Job opportunities are available with federal, state, county, and municipal governments. In addition, knowledge, skills, and abilities acquired in this course of study qualify one for job opportunities with private enterprise in such areas as industrial, retail, and private security.

Job Opportunities

Alcohol Enforcement Officer	Highway Patrolman
College or University Officer	Police Officer
Correctional Officer	Park Security Officer
Correctional Programs Assistant	Private Security Officer
Deputy Sheriff	Retail Security Officer
Industrial Security Officer	Wildlife Enforcement Officer
Investigators	

The North Carolina Training and Standards Commission requires that every law enforcement officer complete an approved basic training program.

SPECIFIC ENTRANCE REQUIREMENTS

- 1. General college admission requirements.
- 2. Three character references are required. One of the references must be from a local law enforcement agency.
- 3. Individuals seeking careers as law enforcement officers must meet the Minimum Standards for Employment criteria outlined in the North Carolina Code Book-General Statute 17-A. These may be reviewed in law enforcement agencies. These requirements are independent of the College and its program.

LAW ENFORCEMENT TECHNOLOGY
Associate in Applied Science Degree

This Program Consists of:		Credit
		Hrs.
Major Courses (LET, BLE Prefixed Courses)		67
Related and General Education Courses		49
Including:		
Communications	12	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	5	
Social Science	12	
Other	17	
Electives	<u>3</u>	
TOTAL		119

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
First Quarter (Fall)				
LET	101	Introduction to Criminal Justice	5	5
POL	103	State and Local Government	4	4
PSY	101	Introduction to Psychology	<u>3</u>	<u>3</u>
			12	12
Second Quarter (Winter)				
LET	102	Introduction to Criminology	5	5
EMS	100	Introduction to Emergency		
Medical Services			2	3
ENG	101	Fundamentals of English	3	3
MAT	110	General College Mathematics	<u>5</u>	<u>5</u>
			15	16
Third Quarter (Spring)				
LET	115	Criminal Law I	3	3
LET	205	Criminal Evidence	4	4
ENG	102	Composition	3	3
PHI	101	Ethics and Human Values	3	3
PSY	203	Abnormal Psychology	<u>3</u>	<u>3</u>
			16	16

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Fourth Quarter (Summer)					
LET	201	Motor Vehicle Law	3	0	3
LET	210	Criminal Investigation I	4	0	4
LET	216	Criminal Law II	3	0	3
ENG	204	Oral Communications	3	0	3
PHO	201	Introduction to Photography	<u>1</u>	<u>2</u>	<u>2</u>
			14	2	15
Fifth Quarter (Fall)					
LET	110	Introduction to Juvenile Justice	5	0	5
LET	211	Introduction to Criminalistics	4	2	5
LET	213	Criminal Investigation II	4	0	4
PSY	151	Applied Psychology for Law Enforcement	<u>3</u>	<u>0</u>	<u>3</u>
			16	2	17
Sixth Quarter (Winter)					
LET	125	Judicial Process	4	0	4
LET	200	Crime Prevention	3	0	3
LET	202	Traffic Planning and Management	3	2	4
ENG	103	Report Writing	3	0	3
SOC	201	Social Problems	<u>3</u>	<u>0</u>	<u>3</u>
			16	2	17
Seventh Quarter (Spring)					
LET	206	Community Relations	3	0	3
LET	212	Narcotics, Drugs and Human Behavior	3	2	4
LET	217	Patrol Procedures	3	0	3
LET	220	Police Organization, Administration and Supervision	<u>5</u>	<u>0</u>	<u>5</u>
			14	2	15
Program Totals			103	10	119*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and eight (8) credit hours of approved Related Electives that must be taken before graduation in addition to the stated required courses.

This program is also offered in the evening schedule. See Evening Programs Listing.

Related Electives

In addition to required courses, students must complete a minimum of eight (8) credit hours of approved Related Electives. These may be taken at any time during the program, providing the student has completed the proper prerequisites and has Departmental Approval of his/her schedule prior to registration.

Electives may be offered on the basis of results from demand surveys conducted early in the previous quarter. Related Electives may be scheduled from the courses indicated on the following page.

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
AOT	100	Computer Keyboarding	1	2	0	2
BIO	101	Human Anatomy and Physiology I	4	3	0	5
BLE	100	Basic Law Enforcement Training	8	0	0	8
(may serve as the RELATED ELECTIVE requirement)						

CHM 100	Introduction to Chemistry	3	3	0	4
LET 105	Introduction to Correction	4	0	0	4
LET 106	Probation and Parole	3	0	0	3
LET 107	Police Liability	3	0	0	3
LET 112	Legal Research	5	0	0	5
LET 116	Criminal Justice Internship	0	0	10	1
LET 250	Topics in Criminal Justice				
	Law Enforcement I	5	0	0	5
MAT 160	Elementary Statistics	5	0	0	5
PSY 206	Applied Psychology	3	0	0	3

Internships of ten (10) contact hours per week per quarter may be completed by Criminal Justice students in partial fulfillment of the elective requirements. Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. A maximum of three (3) credit hours may be earned through internships. Prerequisite: Permission of the department chairperson.

MEDICAL LABORATORY TECHNOLOGY

The Medical Laboratory Technology curriculum prepares graduates to perform clinical laboratory procedures in chemistry, hematology, bacteriology, parasitology, serology, blood banking and body fluid analysis, in order to develop data that may be used in the diagnosis of diseases and in evaluating the effectiveness of treatments.

The medical laboratory technician works under the supervision of a medical technologist and may be employed as a staff technician or assistant supervisor in a medical laboratory, or clinical instructor in an educational institution.

The graduate is eligible to take the registry examination given by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists for certification as a medical laboratory technician or the examination given by the National Certifying Agency as a clinical laboratory technician.

Individuals desiring a career in medical laboratory technology should, if possible, take algebra, biology and chemistry courses prior to entering the program.

Job Opportunities

Medical Laboratory Technician

CLINICAL EXPERIENCE

Clinical experiences are conducted in Clinical Laboratories at various hospitals. Because of clinical space requirements, students will have individual schedules for MLT clinical experiences.

Specific Entrance Requirements

1. General college admission requirements.
 2. High School Units
 - a. Chemistry and algebra required.
(Not required for CLA students.)
 - b. Biology and Geometry strongly recommended.
-

3. Character references (three). (Not required for CLA students.)
4. Acceptable reports of medical examinations by first day of class.
(Not required for CLA students.)
5. Completion of required immunizations including one dose of Hepatitis B vaccine. (Not required for CLA students.)
6. Students who have CLA status and are entering the MLT program to earn the Associate in Applied Science Degree will be given credit for all MLT courses except MLT 211, MLT 218, and MLT 219. These students must take all other courses in the program and meet the stated requirements for graduation.

MEDICAL LABORATORY TECHNOLOGY

Associate in Applied Science Degree

This Program Consists of:	Credit Hrs.
Major Courses (MLT Prefixed Courses)	73
Related and General Education Courses	45
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	21
Social Science	6
Other	3
Electives	<u>3</u>
TOTAL	121

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
MLT	107	Clinical Chemistry I	3	0	0	3
MLT	122	Hematology I	2	4	0	4
MLT	123	Microbiology I	3	2	0	4
ENG	101	Fundamentals of English	3	0	0	3
PHY	110	Physics and Math Methods for MLT	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
(PSY	206)	Applied Psychology	<u>(3)</u>	<u>(0)</u>	<u>(0)</u>	<u>(3)</u>
			17	6	0	20

Second Quarter (Winter)

MLT	114	Immunohematology I	3	2	0	4
MLT	124	Hematology II	1	4	0	3
MLT	125	Microbiology II	3	2	0	4
BIO	101	Human Anatomy and Physiology I	4	3	0	5
CHM	200	Principles of Chemistry I	<u>3</u>	<u>3</u>	<u>0</u>	<u>4</u>
			14	14	0	20

Third Quarter (Spring)

MLT	112	Clinical Chemistry II	3	0	0	3
MLT	118	Immunohematology II	1	2	0	2
MLT	126	Urinalysis/Parasitology	2	4	0	4
BIO	102	Human Anatomy and Physiology II	4	3	0	5
CHM	201	Principles of Chemistry II	3	3	0	4
CAS	101	Introduction to Computing Concepts	<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>
			15	14	0	21

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Fourth Quarter (Summer)						
MLT	211	Instrumentation	2	0	0	2
MLT	220	Hematology Clinical Experience	0	0	30	10
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			5	0	30	15
Fifth Quarter (Fall)						
MLT	221	Chemistry Clinical Experience	0	0	30	10
ENG	102	Composition	3	0	0	3
PHI	101	Ethics and Human Values	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			6	0	30	16
Sixth Quarter (Winter)						
MLT	222	Microbiology Clinical Experience	0	0	30	10
ENG	103	Report Writing	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			3	0	30	13
Seventh Quarter (Spring)						
MLT	223	Immunohematology Clinical Experience	0	0	30	10
SOC	201	Social Problems	3	0	0	3
(SOC	101)	Introduction to Sociology	<u>(3)</u>	<u>(0)</u>	<u>(0)</u>	<u>(3)</u>
			3	0	30	13
Program Totals			63	34	120	121*

Selected courses from this program are also offered in the evening schedule.

*The credit hours total includes the minimum of three (3) credit hours of non-major electives which must be taken before graduation in addition to the stated required courses.

PHLEBOTOMY

A phlebotomy technician curriculum prepares the graduate to draw blood specimens from patients for the purpose of testing and analyzing blood. The job involves duties related to the preparation and maintenance of equipment used in obtaining blood specimen; the use of appropriate communication skills when working with patients; the selection of venipuncture sites; the care of blood specimen; and the entry of the testing process into the computer, as well as clerical duties associated with record keeping of the blood tests.

Job Opportunities

Phlebotomy Technician

CLINICAL EXPERIENCE

Phlebotomy clinical experiences are conducted in medical laboratories at various locations. Because of space requirements, students will have individual schedules for phlebotomy clinical experience.

Specific Entrance Requirements

- 1. General college admission requirements. (See Selection Criteria and Procedures for Allied Health Programs Brochure.)
 - a. Application
 - b. High school transcript
 - c. Acceptable score on reading portion of placement test
- 2. Acceptable reports of medical examinations by first day of class.
- 3. Completion of required immunizations including one dose of Hepatitis B vaccine.

PHLEBOTOMY

Certificate

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Clinic	
First Quarter						
PBT	1101	Basic Concepts in Phlebotomy	9	2	0	10
PBT	1102	Phlebotomy Clinical Experience	0	0	12	4
PSY	1101	Human Relations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			12	2	12	17

PRACTICAL NURSING

The Practical Nursing curriculum graduates are prepared to take the National Council Licensure Examination required to practice as a licensed practical nurse. The Practical Nursing curriculum is designed to develop competencies in practicing the following five components of practice as defined by the North Carolina **Nursing Practice Act**, 1981: participating in assessing the client's physical and mental health including the client's reaction to illnesses and treatment regimens; recording and reporting the results of the nursing assessment; participating in implementing the health care plan developed by the registered nurse and/or prescribed by any person authorized by State law to prescribe such a plan, by performing tasks delegated by and performed under the supervision or under orders or directions of a registered nurse, physician licensed to practice medicine, dentist, or other person authorized by State law to provide such supervision; reinforcing the teaching and counseling of a registered nurse, physician licensed to practice medicine in North Carolina, or dentist; and reporting and recording the nursing care rendered and the client's response to that care.

Licensed practical nurses may be employed in hospitals, nursing homes, clinics, doctors' offices, industry, and public health agencies.

Individuals desiring a career in practical nursing are encouraged to take math and science courses in high school.

Job Opportunities

Licensed Practical Nurse (LPN)

Specific Entrance Requirements

1. General college admission requirements.
2. Have high school credit with grade of at least "C" for high school mathematics and biology.
3. Keyboarding skills are highly recommended.
4. Final acceptance is contingent upon documentation of completion of required immunizations and satisfactory physical and mental health as indicated on the completed examination report. The physical examination must be completed within 90 days of entry into the first nursing class.
5. Documentation of current infant, child, adult CPR certification by entry date into first PNE course.
6. The North Carolina Board of Nursing may deny license to individuals *convicted of a felony or any other crime involving moral turpitude*.
7. Entry into any quarter by transfer or other means except during first quarter is based upon approval by the Department chairperson and availability of space.

PRACTICAL NURSING

Diploma

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Clinic	
First Quarter (Fall)						
PNE	1112	Fundamentals of Nursing	6	2	2	8
PNE	1113	Pharmacology	2	0	0	2
BIO	111	Basic Life Sciences	5	0	0	5
ENG	101	Fundamentals of English	3	0	0	3
NUT	101	Nutrition	3	0	0	3
PSY	101	Introduction to Psychology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			22	2	2	24
Second Quarter (Winter)						
PNE	1120	Clinical I Medical Surgical	0	0	15	5
PNE	1122	Medical Surgical Nursing I	8	0	0	8
PNE	1123	Maternal and Newborn Care	4	0	0	4
PSY	105	Human Growth and Development	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			15	0	15	20
Third Quarter (Spring)						
PNE	1130	Clinical II Maternal Newborn and Medical Surgical Nursing	0	0	18	6
PNE	1132	Medical Surgical Nursing II	10	0	0	10
PNE	1134	Pediatric Nursing	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
			12	0	18	18

				Hrs. Per Week			Credit
				Class	Lab	Clinic	Hrs.
Fourth Quarter (Summer)							
PNE	1140	Clinical III Pediatrics and		0	0	18	6
		Medical Surgical Nursing					
PNE	1142	Medical Surgical Nursing III		10	0	0	10
PNE	1144	Nursing Seminar		<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
				12	0	18	18
Program Totals				61	2	53	80

Nursing courses required as prerequisites must be passed with a minimum grade of "C" before progression to the next course.

Selected courses from this program are also offered in the evening schedule.

RADIOGRAPHY (RADIOLOGIC TECHNOLOGY)

The radiography curriculum prepares the graduate to use radiation to provide images of tissues, organs, bones, and vessels that comprise the human body. The curriculum includes instruction in patient care and management, radiation protection, imaging procedures, quality assurance, recording media processing, equipment maintenance, interpersonal communication, and professional responsibility through an integration of classroom, laboratory, and clinical education. The radiographer is a skilled healthcare professional qualified to provide patient services using imaging modalities as directed by qualified physicians.

Graduates may be employed in radiology departments in hospitals, clinics, physicians' offices, research and medical laboratories, federal and state agencies and industry.

Graduates of accredited programs are eligible to apply to take the national examination administered by the American Registry of Radiologic Technologists for certification and registration as medical radiographers.

Individuals desiring a career in radiography should take courses in biology, algebra, and the physical sciences prior to entering the program.

Job Opportunities

Radiographer
Radiologic Technologist

CLINICAL EXPERIENCE

Students in the Radiography (Radiologic Technology) program will receive clinical training at four major hospitals in the area: Memorial Mission Hospital, Saint Joseph's Hospital, Veterans Administration Medical Center and Margaret Pardee Memorial Hospital. Weekly schedules for classroom and clinical involvement require the student to be in attendance Monday through Friday from approximately 7:30 a.m. until 4:00 p.m. Occasional laboratory experiences may require the student to be in attendance during the late afternoon-early evening hours.

Specific Entrance Requirements

1. General college admission requirements.
2. Biology and one unit of algebra are required.
3. Three letters of recommendation.
4. Acceptable reports of medical examination and immunization by the first day of class.
5. Completion or first dose of Hepatitis B vaccine.
6. Certification of Community CPR within three months of entering program.

NOTICE

Students should be aware that the American Registry of Radiologic Technologists may deny certification to individuals convicted of a felony or any crime involving moral turpitude.

RADIOGRAPHY (RADIOLOGIC TECHNOLOGY)

Associate in Applied Science Degree

This Program Consists of:	Credit Hrs.
Major Courses (RAD Prefixed Courses)	110
Related and General Education Courses	35
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	14
Social Science	3
Other	3
Electives	<u>5</u>
TOTAL	150

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Clinic	
First Quarter (Fall)						
RAD	100	Introduction to Radiologic Technology	3	0	6	5
RAD	102	Radiographic Technique I	2	2	0	3
RAD	103	Medical Terminology	3	0	0	3
RAD	111	Radiographic Positioning I	3	2	0	4
RAD	105	Nursing Procedures in Radiography	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			14	6	6	19
Second Quarter (Winter)						
RAD	106	Clinical Education I	0	0	15	5
RAD	112	Radiographic Technique II	2	2	0	3
RAD	115	Ethics and Communication in Radiography	3	0	0	3
RAD	121	Radiographic Positioning II	3	2	0	4
BIO	101	Anatomy & Physiology I	<u>4</u>	<u>3</u>	<u>0</u>	<u>5</u>
			12	7	15	20

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Third Quarter (Spring)						
RAD	114	Clinical Education II	0	0	15	5
RAD	131	Radiographic Positioning III	3	2	0	4
BIO	102	Anatomy and Physiology II	4	3	0	5
PHY	105	Introduction to Physics	4	0	0	4
ENG	101	Fundamentals of English	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			14	5	15	21
Fourth Quarter (Summer)						
RAD	124	Clinical Education III	0	0	15	5
RAD	125	Radiographic Technique III	4	0	0	4
RAD	201	Radiographic Positioning IV	3	2	0	4
ENG	102	Composition	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			10	2	15	16
Fifth Quarter (Fall)						
RAD	134	Clinical Education IV	0	0	24	8
RAD	214	Radiographic Equipment and Quality Assurance	3	2	0	4
RAD	225	Radiobiology & Radiation Protection	4	0	0	4
ENG	103	Report Writing	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			10	2	24	19
Sixth Quarter (Winter)						
RAD	203	Clinical Education V	0	0	24	8
RAD	206	Imaging Modalities	4	0	0	4
RAD	215	Radiographic Pathology	3	0	0	3
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			10	0	24	18
Seventh Quarter (Spring)						
RAD	212	Clinical Education VI	0	0	24	8
RAD	234	Radiographic Film Evaluation	3	0	0	3
CAS	104	Introduction to Data Processing	2	2	0	3
PSY	101	Introduction to Psychology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			8	2	24	17
Eighth Quarter (Summer)						
RAD	213	Advanced Radiographic Seminar	4	0	0	4
RAD	223	Clinical Education VII	0	0	24	8
SOC	201	Social Problems	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			7	0	24	15
Program Totals			92	14	147	150*

*The credit hours total includes the minimum of five (5) credit hours of non-major electives which must be taken before graduation in addition to the stated required courses.

SOCIAL SERVICE ASSOCIATE

The Social Service Associate curriculum trains paraprofessionals for direct service delivery work in one of the many social service areas. These social service areas include family and child assistance, rehabilitation, health services, medical assistance, youth services, mental health and assistance to the aging, blind and developmentally disabled.

Graduates will find employment with federal, state, county and local government social service agencies and programs and with private organizations that have social service assistance programs.

Job Opportunities

Case Aide, Social Service
Social Worker Aide

Specific Entrance Requirements

1. General college admission requirements.
2. Acceptable reports of medical examination and immunizations by first day of class.
3. Three character/employment references by first day of class.

Notice

Students should be aware that individuals convicted of a felony or any other crime involving moral turpitude may be excluded from internships or denied employment by social service or human service agencies.

SOCIAL SERVICE ASSOCIATE

Associate in Applied Science Degree

		Credit Hrs.
This Program Consists of:		
Major Courses (SWK Prefixed Courses)		51
Related and General Education Courses		48
Including:		
Communications		12
Humanities/Fine Arts		3
Natural Sciences/Mathematics		5
Social Science		12
Other		16
Electives		<u>6</u>
TOTAL		105

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Clinic	
First Quarter (Fall)						
SWK	101	Introduction to Social Services	3	0	0	3
AOT	100	Computer Keyboarding	1	2	0	2
ENG	101	Fundamentals of English	3	0	0	3
MAT	110	General College Mathematics	5	0	0	5
PED	170	Fit and Well for Life	<u>1</u>	<u>2</u>	<u>0</u>	<u>2</u>
			13	4	0	15

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Clinic	
Second Quarter (Winter)						
SWK	102	Introduction to Welfare Services	5	0	0	5
CAS	104	Introduction to				
		Business Data Processing	2	2	0	3
ENG	102	Composition	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
		ELECTIVE	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			16	2	0	17
Third Quarter (Spring)						
PSY	104	Group Process	5	0	0	5
LET	206	Community Relations	3	0	0	3
PED	177	CPR/First Aid Safety	1	2	0	2
PSY	203	Abnormal Psychology	3	0	0	3
SOC	101	Introduction to Sociology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			15	2	0	16
Fourth Quarter (Summer)						
SWK	115	Helping Relationship Technology I	5	0	0	5
EDU	111	Working with Parents and Families	4	0	0	4
ENG	204	Oral Communications	3	0	0	3
PSY	201	Child Psychology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			15	0	0	15
Fifth Quarter (Fall)						
SWK	202	Fundamentals of Interviewing	3	0	0	3
SWK	203	Casework Management	3	0	0	3
SWK	221	Internship & Case Study I	1	0	10	2
PHI	101	Ethics and Human Values	3	0	0	3
SOC	201	Social Problems	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			13	0	10	14
Sixth Quarter (Winter)						
SWK	210	Working with Disabled Clients	3	0	0	3
SWK	215	Helping Relationship Technology II	3	0	0	3
SWK	222	Internship & Case Study II	1	0	10	2
ENG	103	Report Writing	3	0	0	3
		ELECTIVE	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			13	0	10	14
Seventh Quarter (Spring)						
SWK	205	Working with Diverse Populations	3	0	0	3
PSY	211	Stress in Contemporary Society	3	0	0	3
SWK	216	Social Service Job Readiness	3	0	0	3
SWK	218	Child Abuse and Neglect	3	0	0	3
SWK	223	Internship & Case Study III	<u>1</u>	<u>0</u>	<u>10</u>	<u>2</u>
			13	0	10	14
Program Totals			98	8	30	105*

*Program totals include the minimum of six (6) credit hours of non-major electives which must be taken before graduation in addition to the stated required courses.

BUSINESS AND HOSPITALITY EDUCATION

	Accounting*	Administrative Office Technology*	Business Administration
Recommended High School Courses	Keyboarding Accounting English Business electives Algebra	Typewriting/ Keyboarding Computer Appl. Accounting Plus any other Business electives	Keyboarding Accounting Plus any other Business electives
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Com- prehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehen- sion, Sentence Skills, Arith- metic Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall Can take single courses any quarter	Day only Begins Fall Can take single courses any quarter	Day/Night Begins Fall Can take single courses any quarter
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Accountant Estimator Bookkeeper I	Administrative Assistant Office Mgr. Word Processor Info. Processing Specialist	Purchasing Agent Sales Mgr. Gen'l Supervisor Operations Officer Loan Officer

Continued on next page

**Tech Prep agreements with regional high schools.*

BUSINESS AND HOSPITALITY EDUCATION

	Business Computer Programming	Culinary Technology	General Office Technology*
Recommended High School Courses	Keyboarding Computer Applications Algebra II Trigonometry	Keyboarding Mathematics English Nutrition Food Services	Keyboarding Computer Appl. Accounting Plus any other Business electives
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Com- prehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Comput- erized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Com- prehension, Sentence Skills, Arith- metic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Com- prehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall Can take single courses any quarter	Day only Begins Fall	Day/Night Begins Fall Can take single courses any quarter
Degree	Associate in Applied Science	Associate in Applied Science	Diploma (one- year) and Associate in Applied Science
Employment Opportunities	PC Support Computer Operator Programmer Systems Analyst	Saute Chef Grill Chef Gardemanger Chef Soup/Sauce Chef Kitchen Manager Catering & Banquet Manager Dining Room Manager Food & Beverage Purchasing Agent Steward Food, Beverage and Equipment Purveyor	Data Entry Office Support Payroll Clerk Receptionist Word Processor Secretary

BUSINESS AND HOSPITALITY EDUCATION

	Hotel & Restaurant Management	Marketing & Retailing	Operations Management Technology
Recommended High School Courses	Typewriting/ Keyboarding Mathematics Oral Comm. Composition Home Economics or Food Services Accounting	Keyboarding Accounting Plus any other Business electives	Keyboarding Accounting Plus any other Business electives
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Com- prehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Com- prehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehen- sion, Sentence Skills, Arith- metic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day only Begins Fall Single courses any quarter day or night	Day/Night Begins Fall Can take single courses any quarter	Day/Night Begins Fall Can take single courses any quarter
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Management Trainee Restaurant Mgr. Director of Food Services Reservations Manager Front Office Manager Country Club Manager	Assistant Manager Department Manager Sales Representative Salesperson Retail Buyer	Front Line Supervision Team Leadership Operations Planning Quality Assurance Manufacturing Management

**Tech Prep agreements with regional high schools.*

BUSINESS AND HOSPITALITY EDUCATION

A.A.S. DEGREE CONFERRED

The following areas of study are included in Business and Hospitality Education.

Accounting
Administrative Office Technology
Business Administration
Business Computer Programming
Culinary Technology
General Office Technology
Hotel and Restaurant Management
Marketing and Retailing
Operations Management Technology

All of the areas of study in the Division of Business and Hospitality Education are seven quarters in duration and will require from twenty to thirty hours per week of course work. If a student elects to enroll in Business Education through the Evening program, the time required for completion will be extended.

CERTIFICATE AWARDED

Real Estate Appraisal
Real Estate Technical Specialty

DIPLOMA AWARDED

General Office Technology

BUSINESS AND HOSPITALITY EDUCATION PROGRAMS

In North Carolina the opportunities in these programs are increasing. With the increasing population and industrial development in this state, business has become more competitive and automated. Better opportunities will be filled by people with specialized education beyond the high school level. The Business and Hospitality programs are designed to prepare the student for employment in one of many occupations common to business. Programs are aimed at preparing the student in many phases of work that might be encountered.

The Business and Hospitality Education Division offers a flexible approach to meeting individual career objectives. With the assistance of faculty advisors, the student is expected to explore career opportunities available in the business world.

The student's schedule must have Departmental Approval prior to registration.

The A.A.S. degree will be awarded to a student meeting College requirements and completing required courses.

Specific Entrance Requirements for Hospitality Programs

1. General College admission requirements.
 2. Must be in acceptable physical and mental health to meet State requirements for food handling certificate.
-

Objectives of Business & Hospitality Programs

The objectives of the Business and Hospitality Education Division include the following competencies:

- 1. Understand the role of business in the free enterprise system.
- 2. Understand the principles of management, supervision and accountability.
- 3. Gain knowledge of specific academic disciplines in the Business and Hospitality Education Division.
- 4. Gain effective written and oral communication skills.
- 5. Understand human relations as they apply to successful business operations.

ACCOUNTING

The Accounting curriculum is designed to provide students with knowledge and skills necessary for employment and growth in the accounting profession. Often referred to as the "language of business," accounting serves as an informational system for organizations. Accountants assemble, analyze, and communicate essential information about financial operations.

The course of study places emphasis on accounting principles, theories, and practices and includes study in business law, finance, management, and economics. Skills related to the applications of accounting principles are developed through study of communications, computer applications, interpersonal skills development, decision making principles, and ethics.

The curriculum is designed to prepare individuals for entry-level accounting positions in all types of organizations, including CPA firms, small businesses, manufacturing firms, insurance companies, banks, and non-profit organizations such as hospitals, colleges, school systems, and governmental agencies. With work experience and additional education, an individual may advance to positions such as accountant, controller, and auditor.

Job Opportunities

Entry Level	Advanced Level
Accounts Payable Clerk	Accountant (Public, Governmental, Cost, Management)
Accounts Receivable Clerk	Accounts Payable/Receivable Manager
Bookkeeper	Auditor
Cost Clerk	Controller
Junior Accountant	Tax Preparer
Payroll Clerk	

ACCOUNTING

Associate in Applied Science Degree

This Program Consists of:	Credit Hrs.
Major Courses (BUS, ECO Prefixed Courses)	58
Related and General Education Courses	56
Including:	
Communications	15
Humanities/Fine Arts	3
Natural Sciences/Mathematics	9
Social Science	3
Other	26
Electives	<u>5</u>
TOTAL	119

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
AOT	100	Computer Keyboarding	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	General College Mathematics	<u>5</u>	<u>0</u>	<u>5</u>
			15	4	17
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
ENG	102	Composition	3	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			9	2	10
Third Quarter (Spring)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
CAS	104	Introduction to Business Data Processing	2	2	3
MAT	112	Mathematics of Finance	<u>3</u>	<u>2</u>	<u>4</u>
			11	8	15
Fourth Quarter (Summer)					
BUS	114	Business Law	5	0	5
BUS	122	Accounting III	3	2	4
ECO	105	Introduction to Economics	5	0	5
ENG	204	Oral Communication	<u>3</u>	<u>0</u>	<u>3</u>
			16	2	17
Fifth Quarter (Fall)					
BUS	123	Finance	5	0	5
BUS	223	Intermediate Accounting I	5	0	5
BUS	225	Cost Accounting I	5	0	5
AOT	200	Microcomputer Operations	<u>1</u>	<u>3</u>	<u>2</u>
			16	3	17

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
Sixth Quarter (Winter)				
BUS	224	Intermediate Accounting II	3	4
BUS	226	Cost Accounting II	3	4
BUS	229	Taxes I	3	4
BUS	233	Personnel Management and Supervision	3	3
ENG	206	Written Communication Skills	<u>3</u>	<u>3</u>
			15	18
Seventh Quarter (Spring)				
BUS	230	Taxes II	3	4
BUS	247	Insurance	5	5
BUS	269	Auditing	5	5
ENG	103	Report Writing	<u>3</u>	<u>3</u>
			16	17
Program Totals			98	119*

This program is also offered in the evening schedule. See Evening Programs listing.

*The credit hours total includes the minimum of five (5) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

ADMINISTRATIVE OFFICE TECHNOLOGY

This curriculum prepares individuals to perform secretarial and administrative support duties in a variety of offices including those offices with computerized, automated functions.

Students in this curriculum study keyboarding and word/information processing to develop skills in the preparation of business correspondence, reports, statistical copy, manuscripts, and business forms. Administrative support courses emphasize typical office tasks such as scheduling appointments, composing correspondence, and performing reprographic duties. Training is also provided in analyzing and coordinating office duties and systems. Skills and knowledge are taught in the areas of electronic document storage and retrieval and computer software utilization.

Graduates of the program may be employed in offices in private business establishments involved in retailing, marketing, advertising, and manufacturing as well as offices in local, state, and federal government.

Job Opportunities

Typist/Transcriber	Administrative Assistant
Corresponding Secretary	Administrative Office Manager
Electronic Data Transfer	Administrative Secretary
Secretary	Executive Assistant
Information Processing	Office Automations Specialist
Specialist	Supervisor, Communications
Receptionist	Training Coordinator
Telephone Receptionist/	Word Processing Supervisor/
Message Operator	Manager
Secretary	
Word Processing Operator	

ADMINISTRATIVE OFFICE TECHNOLOGY

Associate in Applied Science Degree

			Credit	
			Hrs.	
This Program Consists of:				
Major Courses (AOT Prefixed Courses)			62	
Related and General Education Courses			52	
Including:				
	Communications		15	
	Humanities/Fine Arts		3	
	Natural Sciences/Mathematics		5	
	Social Science		3	
	Other		26	
	Electives		<u>3</u>	
TOTAL			117	

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
AOT	101	Keyboarding for Office Occupations	2	3	3
AOT	115	Information Processing Concepts	3	0	3
BUS	101	Introduction to Business	3	0	3
ENG	101	Fundamentals of English	3	0	3
MAT	110	General College Mathematics	<u>5</u>	<u>0</u>	<u>5</u>
			16	3	17
Second Quarter (Winter)					
AOT	103	Document Formatting	2	3	3
AOT	125	Text Editing Skills	3	0	3
BUS	120	Accounting I	3	2	4
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	102	Composition	<u>3</u>	<u>0</u>	<u>3</u>
			13	7	16
Third Quarter (Spring)					
AOT	105	Document Production	2	3	3
AOT	117	Word Processing	2	3	3
AOT	200	Microcomputer Operations	1	3	2
BUS	121	Accounting II	3	2	4
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>3</u>
			11	11	15
Fourth Quarter (Summer)					
AOT	120	Personal and Professional Development	3	0	3
AOT	217	Advanced Word Processing	2	3	3
ECO	107	Consumer Economics	3	0	3
ENG	206	Written Communication Skills	<u>3</u>	<u>0</u>	<u>3</u>
			11	3	12
Fifth Quarter (Fall)					
AOT	201	Records Management	3	0	3
AOT	218	Desktop Publishing	2	2	3
BUS	234	Introduction to Management	3	2	4
CAS	203	Data Communications and Networking	2	2	3
ENG	103	Report Writing	<u>3</u>	<u>0</u>	<u>3</u>
			13	6	16

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Sixth Quarter (Winter)					
AOT	208	Administrative Support Systems and Procedures I	3	2	4
AOT	214	Machine Transcription	2	3	3
AOT	230	Office Supervision	3	0	3
BUS	114	Business Law	<u>5</u>	<u>0</u>	<u>5</u>
			13	5	15
Seventh Quarter (Spring)					
AOT	202	Software Management for Administrative Support	1	2	2
AOT	209	Administrative Support Systems and Procedures II	3	2	4
AOT	220	Office Skills Reinforcement	2	3	3
AOT	250	Office Systems and Technology Management	<u>1</u>	<u>3</u>	<u>2</u>
			7	10	11
Program Totals			84	45	117*

*The credit hours total includes the following which must be taken before graduation in addition to the stated required courses:

- A minimum of three (3) credit hours of non-major electives
- A three (3) credit-hour Humanities elective
- A minimum of nine (9) credit hours of major electives selected from the following list:

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
AOT	112	Speedwriting Shorthand	2	3	3
AOT	113	Speedwriting Dictation	2	3	3
AOT	114	Advanced Speedwriting for the Automated Office	2	3	3
AOT	216	Payroll Procedures	3	2	4
AOT	219	Advanced Desktop Publishing/ Graphics Design	3	2	4
AOT	260	Emerging Technologies	1	2	2

Credits toward the A.A.S. degree in Administrative Office Technology may be given to persons holding the Certified Professional Secretary rating. If interested, those holding this certification should contact the Chairperson, Department of Computer Technologies. Persons interested in becoming a candidate for the certification can obtain information from the Institute for Certifying Secretaries, 2440 Pershing Road, Suite 6, 10 Crown Center, Kansas City, Missouri 64108.

Credits toward the A.A.S. degree in Administrative Office Technology may be given to persons holding the Professional Legal Secretary rating. If interested, those holding this certification should contact the Chairperson, Department of Computer Technologies. Persons interested in becoming a candidate for the certification can obtain information from the National Association of Legal Secretaries (International), Administrative Offices, 3005 East Skelly Drive, Suite 120, Tulsa, Oklahoma 74105.

Selected courses from this program are also offered in the evening schedule. See the Evening Program listing.

BUSINESS ADMINISTRATION

The Business Administration curriculum provides a broad education in business principles and practices. This curriculum is designed to prepare individuals for entry-level business positions.

In this program of study, the student will gain knowledge of basic business principles and concepts through a study of management functions, marketing, accounting and finance, economics, human resources development, and legal and ethical aspects of business. Skills related to the applications of these business principles are developed through study of communications, mathematics, computer applications, and decision-making principles.

Additional training through practice in classroom activities which develop team-building skills will prepare graduates to function as contributing members of management teams. Graduates may find employment in large and small businesses, not-for-profit service organizations, government agencies, and financial institutions.

Job Opportunities

Entry Level

Account Executive
Business Owner/Entrepreneur
First-level Supervisor
Human Resources Specialist
Loan Officer
Management Trainee
Operations Officer
Purchasing Associate
Sales/Customer Service Rep.
Small Business Manager

Advanced Level

(Supervisor/Manager)
Finance
Food Service & Lodging
Human Resources
Marketing and Sales
Municipal & Gov't. Services
Residence/Public Housing
Warehousing/Distribution
Wholesale or Retail

BUSINESS ADMINISTRATION
Associate in Applied Science Degree

This Program Consists of:	Credit
	Hrs.
Major Courses (BUS, ECO Prefixed Courses)	58
Related and General Education Courses	56
Including:	
Communications	15
Humanities/Fine Arts	3
Natural Sciences/Mathematics	9
Social Science	3
Other	26
Electives	<u>5</u>
TOTAL	119

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
AOT	100	Computer Keyboarding	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	110	General College Mathematics	<u>5</u>	<u>0</u>	<u>5</u>
			15	4	17
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
ENG	102	Composition	3	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			9	2	10
Third Quarter (Spring)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
CAS	104	Introduction to Business Data Processing	2	2	3
MAT	112	Mathematics of Finance	<u>3</u>	<u>2</u>	<u>4</u>
			11	8	15
Fourth Quarter (Summer)					
BUS	114	Business Law	5	0	5
ECO	105	Introduction to Economics	5	0	5
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>3</u>
			13	0	13
Fifth Quarter (Fall)					
BUS	123	Finance	5	0	5
BUS	235	Business Organization and Management	3	2	4
BUS	238	Consumer Behavior	5	0	5
AOT	200	Microcomputer Operations	<u>1</u>	<u>3</u>	<u>2</u>
			14	5	16
Sixth Quarter (Winter)					
BUS	206	Banking and Finance Credit	3	2	4
BUS	229	Taxes I	3	2	4
BUS	233	Personnel Management and Supervision	3	0	3
ENG	206	Written Communication Skills	<u>3</u>	<u>0</u>	<u>3</u>
			12	4	14
Seventh Quarter (Spring)					
BUS	247	Insurance	5	0	5
ENG	103	Report Writing	<u>3</u>	<u>0</u>	<u>3</u>
			8	0	8
Program Totals			82	23	119*

This program is also offered in the evening schedule. See Evening Programs listing.

*(1) The credit hours total includes the minimum of five (5) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

(2) Business Administration students must take a minimum of 18 additional credit hours of business and support courses to be selected with the faculty advisor. These major course electives must be selected from the following list:

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
BUS	122	Accounting III	3	2	4
BUS	125	Introduction to Banking Fundamentals	4	0	4
BUS	164	Real Estate Law	3	0	3
BUS	200	Purchasing	4	0	4
BUS	208	Financial Statements Analysis	5	0	5
BUS	222	Control Accounting	3	2	4
BUS	225	Cost Accounting I	5	0	5
BUS	236	Small Business Management	3	0	3
BUS	237	Advertising	5	0	5
BUS	241	Retailing	3	0	3
BUS	243	International Marketing	3	0	3
BUS	249	Inventory Control	3	0	3
BUS	266	Professional Sales Techniques	3	2	4
BUS	296	Real Estate Fundamentals for Salespersons	6	0	6
ECO	107	Consumer Economics	3	0	3

BUSINESS COMPUTER PROGRAMMING

The primary objective of the Business Computer Programming curriculum is to prepare individuals for gainful employment as computer programmers. The objective is fulfilled through study and application in areas such as computer and systems theories and concepts, data processing techniques, business operations, logic, flow charting, programming procedures and languages and types, uses and operation of equipment.

Entry-level jobs as computer programmer and computer programmer trainee are available. With experience and additional education, the individual may enter jobs such as data processing manager, computer programmer manager, systems analyst, and systems manager.

Job Opportunities

Entry Level

Computer Programmer
Computer Programmer Trainee
Information Systems
Programmer
Process Control
Programmer
Detail Programmer

Advanced Level

Data Processing Manager/
Supervisor
Computer Operations
Manager/Supervisor
Chief Business Programmer
Data Processing
Programmer/Analyst

Computing Facilities

Students have hands-on access to an IBM AS/400 minicomputer, a Novell network and multimedia workstations. Programming languages include C, COBOL, RPG and BASIC. Applications include: word processing, spreadsheets, databases, utilities, and other software. Both DOS-based and Windows-based operating environments are available.

BUSINESS COMPUTER PROGRAMMING

Associate in Applied Science Degree

This Program Consists of:	Credit Hrs.
Major Courses (CAS, CSC Prefixed Courses)	66
Related and General Education Courses	44
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	19
Social Science	3
Other	7
Electives	<u>3</u>
TOTAL	113

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
CSC	115	Program Design and Development	3	2	4
BUS	120	Accounting I	3	2	4
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>0</u>	<u>5</u>
			14	4	16

Second Quarter (Winter)					
CAS	110	Computers and Information Processing	2	2	3
CSC	107	Operating Systems	3	2	4
BUS	121	Accounting II	3	2	4
MAT	102	Algebra and Trigonometry II	<u>5</u>	<u>0</u>	<u>5</u>
			13	6	16

Third Quarter (Spring)					
CAS	200	Microcomputer Spreadsheet Applications	2	2	3
CSC	215	COBOL Programming I	2	2	3
BUS	101	Introduction to Business	3	0	3
ENG	102	Composition	3	0	3
MAT	160	Elementary Statistics	<u>5</u>	<u>0</u>	<u>5</u>
			15	4	17

Fourth Quarter (Summer)					
CAS	118	Database Management Concepts	3	2	4
CAS	202	Microcomputer Configuration and Management	2	2	3
CSC	216	COBOL Programming II	2	2	3
ECO	102	Economics	3	0	3
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>3</u>
			13	6	16

Fifth Quarter (Fall)					
CAS	203	Data Communications and Networking	2	2	3
CSC	218	RPG Programming I	2	2	3
CSC	222	C Programming	2	2	3
BUS	222	Control Accounting	<u>3</u>	<u>2</u>	<u>4</u>
			9	8	13

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Sixth Quarter (Winter)					
CAS	204	Network Operations	2	2	3
CAS	220	Systems Analysis and Design	2	3	3
CSC	219	RPG Programming II	2	2	3
CSC	223	Advanced C Programming	2	2	3
MAT	112	Mathematics of Finance	3	2	4
			11	11	16
Seventh Quarter (Spring)					
CAS	221	Advanced Projects	2	3	3
CAS	225	Workplace Issues for the Computer Professional	3	0	3
BUS	234	Introduction to Management	3	2	4
ENG	103	Report Writing	3	0	3
			11	5	13
Program Totals			86	44	113*

This program is also offered in the evening schedule. See Evening Programs listing.

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

CULINARY TECHNOLOGY

The Culinary Technology curriculum is designed to provide the student with the knowledge and skills to become a chef. This is accomplished through a combination of course work, in-house observation, laboratory practice, and supervised work experience in the field.

Food preparation, food cost control, purchasing, beverage cost control, and menu planning are typical subjects. The student will also take courses in convenience foods, garde-manger, and sanitation, as well as courses in accounting, personal management, human relations, composition, and oral communications.

Graduates may find employment in the fine hotels, gourmet restaurants, private clubs, and for steamship lines. The graduate would typically be engaged in a progression of positions, from commis to station chef and sous chef, culminating in the position of executive chef and beyond.

Job Opportunities

Entry Level

Commis (Apprentice):

Legumier (Vegetable Cook)
Potagier (Soup Cook)
Saucier (Sauce Cook)
Poissonier (Fish Cook)
Boucher (Butcher)
Rotisseur (Roast Cook)

Advanced Level

Chef:

Legumier (Vegetable Cook)
Potagier (Soup Cook)
Saucier (Sauce Cook)
Poissonier (Fish Cook)
Boucher (Butcher)
Rotisseur (Roast Cook)

Entry Level

Boulangier (Baker)
Entremetier (Fry Cook)
Gardemanger (Cold Meat Cook)

Advanced Level

Boulangier (Baker)
Entremetier (Fry Cook)
Gardemanger (Cold Meat Cook)
Sous Chef (Assistant)
Executive Chef
Certified Executive Chef
Master Chef

CULINARY TECHNOLOGY

Associate in Applied Science Degree

This Program Consists of:	Credit Hrs.
Major Courses (CSP, HRM Prefixed Courses)	61
Related and General Education Courses	48
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	5
Social Science	3
Other	25
Electives	<u>3</u>
TOTAL	112

			Hrs. Per Week			Credit
			Class	Lab	Lab	Hrs.
First Quarter (Fall)						
CSP	101	Food Preparation I	2	0	9	5
CSP	107	Food Service Equipment	1	2	0	2
HRM	101	Hospitality Orientation	3	0	0	3
HRM	213	Food Service Sanitation	3	0	0	3
MAT	110	General College Mathematics	<u>5</u>	<u>0</u>	<u>0</u>	<u>5</u>
			14	2	9	18

Second Quarter (Winter)						
CSP	103	Food Preparation II	2	2	9	6
CSP	109	International Cuisine	2	2	0	3
HRM	104	Food Purchasing I	3	0	0	3
HRM	108	Food Cost Control	3	0	0	3
ENG	101	Fundamentals of English	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			13	4	9	18

Third Quarter (Spring)						
CSP	105	Baking I	2	2	0	3
CSP	108	Food Preparation III	1	0	9	4
HRM	109	Food Purchasing II	3	0	0	3
HRM	211	Menu Engineering	3	0	0	3
NUT	100	Nutrition: Culinary	3	0	0	3
ENG	206	Written Communication Skills	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			15	2	9	19

Fourth Quarter (Summer)						
CSP	110	Supervised Work Experience	<u>0</u>	<u>0</u>	<u>40</u>	<u>4</u>
			0	0	40	4

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Fifth Quarter (Fall)					
CSP	114	Gardemanger	2	0	3
CSP	201	Food Preparation IV	3	0	6
CSP	203	Dining Room	1	2	2
HRM	209	Hospitality Personnel Management	<u>3</u>	<u>0</u>	<u>3</u>
			9	2	14
Sixth Quarter (Winter)					
CSP	210	Food Preparation V	3	0	6
CSP	215	Classical Food Preparation	2	0	3
HRM	216	Beverage Management	3	2	4
ENG	102	Composition	<u>3</u>	<u>0</u>	<u>3</u>
			11	2	16
Seventh Quarter (Spring)					
CSP	112	Baking II	1	0	2
CSP	212	Food Preparation VI	1	0	4
CSP	214	Wine Appreciation	0	2	1
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communications	3	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			10	4	16
Program Totals			72	16	111*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

Selected courses from this program are also offered in the evening schedule.

GENERAL OFFICE TECHNOLOGY

The purposes of the General Office Technology curriculum are to (1) prepare the individual to enter clerical office occupations, (2) provide an educational program for individuals wanting education for upgrading (moving from one position to another) or retraining (moving from present position to a clerical position), and (3) provide an opportunity for individuals wanting to fulfill professional or general interest needs.

These purposes will be fulfilled through skill development in the areas of typewriting, filing, and business machines. Through these skills and through development of personal competencies and qualities, the individual will be able to function effectively in office-related activities.

Job Opportunities

Entry Level

Business Machine Operator
Data Typist
Clerk-Typist
Typist

Advanced Level

Transcribing Machine
Operator Supervisor
Duplicating Machine
Operator III

Entry Level

Payroll Clerk
File Clerk I
General Office Clerk
Posting Clerk
General Clerk
Appointment Clerk
Receptionist

Advanced Level

Automatic Typewriter
Operator
File Clerk II
Billing Typist
Accounting Clerk
Correspondence Clerk
Administrative Clerk
Personnel Clerk

GENERAL OFFICE TECHNOLOGY

Associate in Applied Science Degree

	Credit Hrs.
This Program Consists of:	
Major Courses (AOT, OTC Prefixed Courses)	54
Related and General Education Courses	51
Including:	
Communications	17
Humanities/Fine Arts	3
Natural Sciences/Mathematics	5
Social Science	5
Other	21
Electives	<u>5</u>
TOTAL	110

Diploma

			Hrs. Per Week Class Lab	Credit Hrs.
First Quarter (Fall)				
AOT	101	Keyboarding for Office Occupations	2	3
AOT	120	Personal and Professional Development	3	3
BUS	100	Contemporary Business	3	3
ENG	111	Grammar	5	5
MAT	110	General College Mathematics	<u>5</u>	<u>5</u>
			18	19
Second Quarter (Winter)				
AOT	103	Document Formatting	2	3
AOT	201	Records Management	3	3
BUS	117	Clerical Accounting I	5	6
ENG	102	Composition	3	3
OTC	100	Spelling and Punctuation Study	<u>3</u>	<u>3</u>
			16	18
Third Quarter (Spring)				
AOT	105	Document Production	2	3
AOT	117	Word Processing	2	3
BUS	118	Clerical Accounting II	5	6
ENG	206	Written Communication Skills	3	3
OTC	110	Practical Office English	<u>5</u>	<u>5</u>
			17	20

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Fourth Quarter (Summer)					
AOT	200	Microcomputer Operations	1	3	2
AOT	208	Administrative Support Systems and Procedures I	3	2	4
AOT	216	Payroll Procedures	3	2	4
*AOT	217	Advanced Word Processing	2	3	3
AOT	218	Desktop Publishing	<u>2</u>	<u>2</u>	<u>3</u>
			11	12	16

* BUS 100 is required only for those seeking the General Office Technology Degree.

After completion of the first four (4) quarters, students may receive a General Office Technology Diploma.

Diploma Program Totals	59	28	70
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This program is also offered in the evening schedule. See Evening Programs listing.

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Fifth Quarter (Fall)					
AOT	115	Information Processing Concepts	3	0	3
CAS	104	Introduction to Business Data Processing	2	2	3
ECO	108	Consumer Economics	5	0	5
OTC	272	Vocabulary Building	<u>2</u>	<u>0</u>	<u>2</u>
			12	2	13

Sixth Quarter (Winter)					
AOT	214	Machine Transcription	2	3	3
AOT	250	Office Systems and Technology Management	1	3	2
CAS	203	Data Communications and Networking	2	2	3
ENG	103	Report Writing	3	0	3
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>3</u>
			11	8	14

Seventh Quarter (Spring)					
++OTC	218	Cooperative Education	<u>0</u>	<u>20</u>	<u>2</u>
			0	20	2

Degree Program Totals	85	58	110*
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*The credit hours total includes the minimum of five (5) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

*The following substitutions may be made ECO 108-ECO 105; ENG 111-ENG 101; BUS 117-BUS 120; BUS 118- BUS 121.

AOT courses with similar course titles, and subject content may be substituted for OTC courses with department chairperson's permission.

++Subject to departmental guidelines, appropriate work experience may be used in lieu of OTC 218.

Selected courses from this program are also offered in the evening schedule.

HOTEL AND RESTAURANT MANAGEMENT

The Hotel and Restaurant Management curriculum trains students to work as supervisory and management personnel in hotels, restaurants, and clubs. Areas of study include front-office management, accounting, sales promotion, food and beverage control, personnel management, food preparation and service. The internship program is also provided to enable the student to acquire experience under the direction of a qualified manager and college supervisor.

The graduate has an opportunity for employment with airlines, colleges, schools, convalescent homes, government services, hospitals, hotels, clubs, and restaurants.

Job Opportunities

Entry Level

- Cashier, Front Office
- Food and Beverage Checker
- Hotel Cashier, General
- Kitchen Steward
- Night Auditor
- Housekeeping Supervisor

Advanced Level

- Food Buyer
- Director, Food Services
- Executive Housekeeper
- Food and Beverage Controller
- Food Service Supervisor
- Housekeeper
- Manager, Cafeteria
- Manager, Catering
- Manager, Front Office
- Manager, Lodging Facilities
- Manager, Reservations
- Sales Representative, Hotel and Restaurant Equipment and Supplies
- Sales Representative, Hotel Services
- Supervisor, Cashier and Food Checker

MOUNTAIN TECH LODGE

An on-campus motor lodge, Mountain Tech Lodge, operated and maintained by the students, provides practical experience under the direction of College faculty.

HOTEL AND RESTAURANT MANAGEMENT

Associate in Applied Science Degree

	Credit
This Program Consists of:	Hrs.
Major Courses (CSP, HRM Prefixed Courses)	65
Related and General Education Courses	46
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	5
Social Science	3
Other	23
Electives	<u>3</u>
TOTAL	114

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
HRM	101	Hospitality Orientation	3	0	3
HRM	213	Food Service Sanitation	3	0	3
CSP	101	Food Preparation I	2	0	5
CSP	107	Food Service Equipment	1	2	2
MAT	110	General College Mathematics	<u>5</u>	<u>0</u>	<u>5</u>
			14	2	18
Second Quarter (Winter)					
HRM	104	Food Purchasing I	3	0	3
HRM	108	Food Cost Control	3	0	3
CSP	102	HRM Food Preparation II	3	0	5
AOT	100	Computer Keyboarding	1	2	2
BUS	120	Accounting I	<u>3</u>	<u>2</u>	<u>4</u>
			13	4	17
Third Quarter (Spring)					
HRM	106	Front Office Procedures	5	2	6
HRM	109	Food Purchasing II	3	0	3
HRM	218	Dining Room Management	3	0	3
CSP	104	HRM Food Preparation III	3	0	5
ENG	101	Fundamentals of English	<u>3</u>	<u>0</u>	<u>3</u>
			17	2	20
Fourth Quarter (Summer)					
HRM	110	Supervised Work Experience	<u>2</u>	<u>0</u>	<u>6</u>
			2	0	6
Fifth Quarter (Fall)					
HRM	204	Hotel Information Systems	2	2	3
HRM	207	Laws of Innkeeping	6	0	6
HRM	208	Supervisory Housekeeping	3	2	4
HRM	209	Hospitality Personnel Management	3	0	3
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>3</u>
			17	4	19
Sixth Quarter (Winter)					
HRM	206	Hospitality Management	4	2	5
HRM	210	Hospitality Marketing	2	2	3
HRM	216	Beverage Management	3	2	4
ENG	102	Composition	<u>3</u>	<u>0</u>	<u>3</u>
			12	6	15
Seventh Quarter (Spring)					
HRM	211	Menu Engineering	3	0	3
HRM	220	Advanced Hospitality Management	2	4	4
ENG	206	Written Communication Skills	3	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			11	4	13
Program Totals			86	22	114*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

Selected courses from this program are also offered in the evening schedule.

MARKETING AND RETAILING

The Marketing and Retailing curriculum is designed to prepare the individual for entry into middle-management positions in various marketing and retailing businesses and industries. This purpose will be fulfilled through study and application in areas such as marketing and merchandising techniques, management, selling, advertising, retailing, and credit and collection procedures.

Through knowledge and skills the individual will be able to perform marketing and distribution activities and through the development of personal competencies and qualities will be provided the opportunity to enter an array of marketing and distribution jobs.

Job Opportunities

Entry Level

Display Person
General Salesperson
Assistant Buyer
Junior Executive
Trainee Manager

Advanced Level

Advertising Manager
Display Manager
Store Manager I
Buyer I
Department Manager
Merchandising Manager

MARKETING AND RETAILING
Associate in Applied Science Degree

			Credit	
			Hrs.	
This Program Consists of:				
Major Courses (BUS, ECO Prefixed Courses)			55	
Related and General Education Courses			56	
Including:				
Communications			15	
Humanities/Fine Arts			3	
Natural Sciences/Mathematics			9	
Social Science			3	
Other			26	
Electives			<u>5</u>	
TOTAL			116	
			Hrs. Per Week	
			Class	Credit
			Lab	Hrs.
First Quarter (Fall)				
BUS	101	Introduction to Business	3	3
BUS	120	Accounting I	3	4
AOT	100	Computer Keyboarding	1	2
ENG	101	Fundamentals of English	3	3
MAT	110	General College Mathematics	<u>5</u>	<u>5</u>
			15	17
Second Quarter (Winter)				
BUS	121	Accounting II	3	4
ENG	102	Composition	3	3
PSY	206	Applied Psychology	<u>3</u>	<u>3</u>
			9	10

			Hrs. Per Week Class	Lab	Credit Hrs.
Third Quarter (Spring)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	3	2	4
CAS	104	Introduction to Business Data Processing	2	2	3
MAT	112	Mathematics of Finance	<u>3</u>	<u>2</u>	<u>4</u>
			11	8	15
Fourth Quarter (Summer)					
BUS	114	Business Law	5	0	5
BUS	243	International Marketing	3	0	3
ECO	105	Introduction to Economics	5	0	5
ENG	204	Oral Communication	<u>3</u>	<u>0</u>	<u>3</u>
			16	0	16
Fifth Quarter (Fall)					
BUS	123	Finance	5	0	5
BUS	237	Advertising	5	0	5
BUS	238	Consumer Behavior	5	0	5
AOT	200	Microcomputer Operations	<u>1</u>	<u>3</u>	<u>2</u>
			16	3	17
Sixth Quarter (Winter)					
BUS	229	Taxes I	3	2	4
BUS	233	Personnel Management and Supervision	3	0	3
BUS	241	Retailing	3	0	3
BUS	266	Professional Sales Techniques	3	2	4
ENG	206	Written Communication Skills	<u>3</u>	<u>0</u>	<u>3</u>
			15	4	17
Seventh Quarter (Spring)					
BUS	206	Banking and Finance Credit	3	2	4
BUS	247	Insurance	5	0	5
BUS	248	Marketing Research	3	2	4
ENG	103	Report Writing	<u>3</u>	<u>0</u>	<u>3</u>
			14	4	16
Program Totals			96	25	116*

*The credit hours total includes the minimum of five (5) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

This program is also offered in the evening schedule. See Evening Programs listing.

OPERATIONS MANAGEMENT TECHNOLOGY

The Operations Management Technology curriculum is designed to educate individuals in the technical aspects of operations management for manufacturing and service industries. The curriculum emphasizes analytical reasoning, problem solving, and continuous improvement concepts required in today's dynamic business and industry environments. These concepts are developed through integrated study in quality and productivity, organizational management and effectiveness, financial analysis, and the management of human, physical, and information resources.

The Operations Management Technology curriculum is structured to meet the educational goals of individuals seeking leadership positions and those wishing to enhance their professional skills.

Job Opportunities

Front Line Supervision	Service Management
Team Leadership	Human Resources Management
Operations Planning	Logistics/Distribution
Quality Assurance	Occupational Health and Safety
Manufacturing Management	Inventory/Materials Management

OPERATIONS MANAGEMENT TECHNOLOGY

Associate in Applied Science Degree

This Program Consists of:	Credit Hrs.
Major Courses (BUS, ECO, ISC Prefixed Courses)	64
Related and General Education Courses	41
Including:	
Communications	15
Humanities/Fine Arts	3
Natural Sciences/Mathematics	10
Social Science	3
Other	10
Electives	<u>6</u>
TOTAL	111

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
First Quarter (Fall)				
ISC	102	Industrial Safety	3	3
BUS	120	Accounting I	3	4
ENG	101	Fundamentals of English	3	3
MAT	110	General College Mathematics	<u>5</u>	<u>5</u>
			14	15
Second Quarter (Winter)				
AOT	100	Computer Keyboarding	1	2
BUS	121	Accounting II	3	4
ENG	102	Composition	3	3
PSY	206	Applied Psychology	<u>3</u>	<u>3</u>
			10	12
Third Quarter (Spring)				
BUS	234	Introduction to Management	3	4
BUS	239	Introduction to Marketing	3	4
CAS	104	Introduction to Business Data Processing	2	3
MAT	160	Elementary Statistics	<u>5</u>	<u>5</u>
			13	16
Fourth Quarter (Summer)				
ISC	105	Introduction to Production	5	5
BUS	114	Business Law	5	5
ECO	105	Introduction to Economics	5	5
ENG	204	Oral Communications	<u>3</u>	<u>3</u>
			18	18

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Fifth Quarter (Fall)					
ISC	211	Time Study-Work Measurement	3	2	4
BUS	200	Purchasing	4	0	4
BUS	225	Cost Accounting I	5	0	5
BUS	249	Inventory Control	3	0	3
			15	2	16
Sixth Quarter (Winter)					
ISC	202	Quality Control	3	2	4
ISC	209	Plant Layout	1	4	3
BUS	233	Personnel Management and Supervision	3	0	3
ENG	206	Written Communication Skills	3	0	3
			10	6	13
Seventh Quarter (Spring)					
BUS	235	Business Organization and Management	3	2	4
BUS	247	Insurance	5	0	5
ENG	103	Report Writing	3	0	3
			11	2	12
Program Totals			91	22	111*

*The credit hours total includes the minimum of six (6) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

This program is also offered in the evening schedule. See Evening Programs listing.



Tall pines stand guard.

ENGINEERING AND APPLIED TECHNOLOGY

	Air Conditioning, Heating, and Refrigeration	Automotive Mechanics*	Automotive Service Technician
Recommended High School Courses	Electricity Electronics	Applied Mathematics Electronics	Physics
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Comput- erized Place- ment Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Comput- erized Place- ment Tests (CPT).	Mathematics (2 units, including Algebra) Acceptable scores on SAT, ACT, or Reading Com- prehension, Arithmetic Skills, and Elementary Algebra, College Board Comput- erized Place- ment Tests (CPT).
Program Schedule	Day/Night Begins Fall Can take some single courses any quarter.	Night Begins Fall	Begins Fall of even years and Winter of odd years
Degree	A diploma is awarded.	A diploma is awarded.	Associate in Applied Science
Employment Opportunities	Maint. Tech. Climate Control Technician Service Tech. Systems Eng. Refrigeration Tech Estimator	Positions with Automotive Dealerships and Independent Shops Auto Machine Shop	General Automotive Technician Specialized Technician Shop Supervisor

Continued on next page

*Tech Prep agreements with regional high schools.

ENGINEERING AND APPLIED TECHNOLOGY

	Civil Engineering Technology	Diesel Vehicle Maintenance	Drafting & Design Engineering Technology*
Recommended High School Courses	Trigonometry Drafting	Applied Mathematics Electronics Electricity	Drafting
A-B Tech Entrance Requirements	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Comput- erized Place- ment Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehen- sion and Arithmetic Skills, College Board Comput- erized Place- ment Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT or Reading Com- prehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Comput- erized Place- ment Tests (CPT).
Program Schedule	Day Begins Fall Night Begins in odd numbered years Can take single courses any quarter	Day Only Begins Fall	Day Begins Fall Night Begins in odd numbered years only
Degree	Associate in Applied Science	A diploma is awarded.	Associate in Applied Science
Employment Opportunities	Construction Technician Materials Testing Technician Construction Inspector Engineering Tech.	Diesel Mech. Fuel Injection Servicer Repairer, Heavy Tractor Mech. Helper	Mech. Design Product Design Mfg. Design

*Tech Prep agreements with regional high schools.

ENGINEERING AND APPLIED TECHNOLOGY

	Electronics Engineering Technology*	Electronic Servicing	Industrial Electrical/ Electronics Technology
Recommended High School Courses	Trigonometry	Technical Math Algebra I	Trigonometry
A-B Tech Entrance Requirements	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall	Night Begins Fall	Night Begins Fall
Degree	Associate in Applied Science	A diploma is awarded.	Associate in Applied Science
Employment Opportunities	Special Projects Engineer Electronics Maint. Tech. Control Systems	Install and Service Radio, TV, Audio/Video, Entertainment, Digital Systems, VCR'S, CD Players, Cable Components and Systems	Industrial Maint. Tech. Industrial Electrician Facilities Tech.

Continued on next page

*Tech Prep agreements with regional high schools.

ENGINEERING AND APPLIED TECHNOLOGY

	Machinist	Mechanical Engineering Technology	Residential Carpentry
Recommended High School Courses	Applied Mathematics Drafting or Blueprint Reading	Trigonometry Physics	Applied Mathematics Drafting Woodworking Courses
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall Will also offer afternoon schedule on demand.	Day Begins Fall Night Begins in even numbered years Can take single courses any quarter.	Day/Night Begins Fall
Degree	Diploma and/or 2-yr. Advanced Diploma Offered Evenings	Associate in Applied Science	A diploma is awarded.
Employment Opportunities	For Manufacturers as Machinist Machine or CNC Set-Up Operator Quality Control Technician	Mfg. Engineer Quality Control Technician Mechanical Designer Maintenance Engineering Technician Controls Engineering Technician	For Contractors as Carpenters or Estimators In Cabinet Shop as Cabinetmakers

ENGINEERING AND APPLIED TECHNOLOGY

	Surveying Technology	Tool, Die and Mold Making	Welding
Recommended High School Courses	Trigonometry Drafting	Applied Mathematics Geometry Trigonometry	Applied Mathematics Blueprint Reading Drafting
A-B Tech Entrance Requirements	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Comput- erized Place- ment Tests (CPT).	Successful Completion of the Machinist Program with grade of "B" or better in certain MES and MAT courses	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Comput- erized Place- ment Tests (CPT).
Program Schedule	Day Begins Fall Night Begins in odd numbered years Can take single courses any quarter.	Day Begins Fall Night Begins in even years only	Day/Night Begins Fall Can take single courses any quarter.
Degree	Associate in Applied Science	A technical diploma is awarded.	A diploma is awarded.
Employment Opportunities	Construction Layout Tech. Land Surveyor Mapping	Positions with Tool, Die, and Moldmaking Shops	Arc Welder Arc Welder- Mach. Operator Gas Welder- Mach. Operator Combination Welder Pipe Welder

ENGINEERING AND APPLIED TECHNOLOGY

A.A.S. DEGREE CONFERRED

The following areas of study are included in Engineering and Applied Technology:

- Automotive Service Technician
- Civil Engineering Technology
- Electronics Engineering Technology
- Drafting and Design Engineering Technology
- Industrial Electrical/Electronics Technology
- Mechanical Engineering Technology
- Surveying Technology
- Tool Design Technology

ADVANCED DIPLOMA AWARDED

Machinist

DIPLOMA AWARDED

- Air Conditioning, Heating, and Refrigeration
- Automotive Mechanics
- Diesel Vehicle Maintenance
- Electronic Servicing
- Machinist
- Residential Carpentry
- Tool, Die and Mold Making
- Welding

CERTIFICATE AWARDED

Tool Design Technology

The Engineering and Applied Technology division offers a variety of Associate in Applied Science degree programs in engineering technologies and diploma programs in applied technologies. Most programs are available on a day and evening basis.

Students enrolled in this division are provided an appropriate mix of theory and hands-on applications. Students in the diploma programs spend much of their time working under industrial shop conditions. Modern facilities include well-equipped laboratories and shops to support goals of the programs. Emphasis is placed on student proficiency in the use of procedures, equipment, and instruments related to the specific program area. Appropriate related and general education courses support these applied programs.

**SPECIFIC ENTRANCE REQUIREMENTS
FOR ENGINEERING AND APPLIED TECHNOLOGY**

- 1. General college admission requirements.

**FURTHER ENTRANCE REQUIREMENTS FOR
ENGINEERING TECHNOLOGY STUDENTS**

- 2. Have high school credit for two units of math, one of which is in algebra and the other in algebra II, plane geometry, or equivalent. (For Automotive Service Technician-any unit math .)
- 3. It is recommended that the candidate should have completed a unit of science beyond general science, such as physics or chemistry.

AIR CONDITIONING, HEATING, AND REFRIGERATION

The Air Conditioning, Heating, and Refrigeration curriculum is designed to teach knowledge and skills necessary for servicing and installing residential and light commercial climate control equipment. Instruction will include heating and cooling theory, applied electricity and electronics, and the operating principles for a wide-range of heating and cooling equipment. The diploma program will emphasize start-up and service skills for oil, gas, and electric furnaces, air-cooled air conditioning and air-to-air heat pumps.

Advanced diploma level programs will provide for more in-depth study and experience and will also include service and installation of water-cooled air conditioners, water source heat pumps, variable speed heat pumps, conventional hydronic systems, and residential and light commercial system design.

Job Opportunities

Entry Level

- | | |
|---------------------------------------|-------------------------|
| Air Conditioning Mechanic | Heating Mechanic |
| Heating and Air Conditioning Mechanic | HVAC Service Technician |

AIR CONDITIONING, HEATING AND REFRIGERATION

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
AHR	1123	Principles of Air Conditioning	3	0	9	6
AHR	1124	Principles of Heating: Fuels and Burners	2	0	6	4
ELC	1117	Basic Electricity	3	2	0	4
WLD	1101	Basic Welding	1	2	0	2
			9	4	15	16

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Second Quarter (Winter)						
AHR	1121	Fundamentals of Refrigeration: Domestic	3	0	12	7
BPR	1116	Blueprint Reading: Air Conditioning	2	2	0	3
ELC	1118	Applied Electricity	3	2	0	4
ENG	1102	Communication Skills	3	0	0	3
MAT	1101	Fundamentals of Mathematics	<u>5</u>	<u>0</u>	<u>0</u>	<u>5</u>
			16	4	12	22
Third Quarter (Spring)						
AHR	1122	Fundamentals of Refrigeration: Commercial	3	0	12	7
ELN	105	Industrial Electronics	1	0	3	2
MEC	228	HVAC Motor Controls	1	4	0	3
PSY	1101	Human Relations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			8	4	15	15
Fourth Quarter (Summer)						
AHR	1126	All Year Comfort Systems and A.C. Servicing	2	0	9	5
AHR	1127	Duct Construction and Maintenance	2	0	6	4
BUS	1103	Small Business Operations	3	0	0	3
PHY	1101	Applied Science I	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			10	2	15	16
Program Totals			43	14	57	69

This program is also offered in the evening schedule. See Evening Programs listing.

AUTOMOTIVE SERVICE TECHNICIAN

The Automotive Service Technician curriculum is comprised of cooperative education training and related classroom instruction. Instruction is organized and systematic, designed to provide the student with knowledge of theoretical, technical, and general academic subjects related to the trade of the automotive technician.

The cooperative work phase of the program requires students to be employed full-time in supervised automotive mechanic positions to receive on-the-job experience. The cooperative work phase will be supervised and evaluated.

Students must have and maintain a valid driver's license throughout the program.

Job Opportunities	
Entry Level	Advanced Level
General Mechanic	Shop Supervisor
Tune-up Mechanic	Shop Foreman
Front-end Specialist	
Automatic Transmission	
Brake Specialist	

AUTOMOTIVE SERVICE TECHNICIAN

Associate in Applied Science Degree

This Program Consists of:	Credit Hrs.
Major Courses (AUT Prefixed Courses)	75
Related and General Education Courses	41
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	13
Social Science	6
Other	7
Electives	<u>3</u>
TOTAL	119

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
First Quarter (Fall)						
AUT	100	Preventive Maintenance and Safety Inspection	2	2	0	3
AUT	101	Internal Combustion Engines I	2	4	0	4
AUT	103	Electrical Systems I	2	4	0	4
ENG	101	Fundamentals of English	3	0	0	3
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>0</u>	<u>0</u>	<u>5</u>
			14	10	0	19
Second Quarter (Winter)						
AUT	152	Cooperative Work Experience	0	0	30	3
CAS	104	Introduction to Business Data Processing	<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>
			2	2	30	6
Third Quarter (Spring)						
AUT	102	Internal Combustion Engines II	2	4	0	4
AUT	104	Electrical Systems II	2	2	0	3
AUT	105	Basic Automotive Fuel Systems	2	4	0	4
ENG	102	Composition	3	0	0	3
PHY	111	Physics I-Mechanics	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			12	12	0	18
Fourth Quarter (Summer)						
AUT	154	Cooperative Work Experience	<u>0</u>	<u>0</u>	<u>30</u>	<u>3</u>
			0	0	30	3
Fifth Quarter (Fall)						
AUT	201	Automotive Chassis and Suspension Systems I	2	4	0	4
AUT	203	Automotive Power Trains I	2	4	0	4
AUT	206	Brake Systems	2	2	0	3
AUT	209	Automotive Emission Control Systems	2	2	0	3
ELN	150	Control Devices	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			11	14	0	18
Sixth Quarter (Winter)						
AUT	156	Cooperative Work Experience	0	0	30	3
PHY	112	Physics II-Rotation and Matter	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			3	2	30	7

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
Seventh Quarter (Spring)						
AUT	202	Automotive Chassis and Suspension Systems II	2	2	0	3
AUT	204	Automotive Power Trains II	2	4	0	4
AUT	205	Automotive Heating and Air Conditioning	2	2	0	3
AUT	207	Automotive Electronics	3	2	0	4
ENG	103	Report Writing	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			12	10	0	17
Eighth Quarter (Summer)						
AUT	158	Cooperative Work Experience	0	0	30	3
		Social Science Elective	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			3	0	30	6
Ninth Quarter (Fall)						
AUT	208	Automotive Electronic Controlled Systems	3	2	0	4
AUT	210	Automotive Fuel Injection	3	2	0	4
AUT	211	Engine Performance and Drivability	2	6	0	5
ENG	204	Oral Communications	3	0	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			14	10	0	19
Program Totals			71	60	120	119*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

Selected courses from this program are also offered in the evening schedule.

CIVIL ENGINEERING TECHNOLOGY

The Civil Engineering Technology curriculum provides the specialized background and related theory for technicians who work primarily with architects and engineers in the field of construction. The Civil Engineering Technician carries out many of the planning and supervising tasks necessary in the construction of transportation systems, such as highways, pipelines, railroads, airfields, and transmission lines; structures for residential and commercial buildings, bridges, dams, and power plants; and water and waste treatment systems. The graduate may perform job tasks in planning, drafting, estimating, supervising, inspecting, or managing construction projects. Other duties might include ordering materials, interpreting plans and specifications, structural detailing, drafting work, making engineering computation of earth work, storm drainage and property surveys.

Upon graduation from this program, the Civil Engineering Technician may qualify for various jobs, such as surveying instrumentation and/or party chief, field or laboratory materials tester, construction foreman, field engineering technician or superintendent, expeditor, manager, estimator, construction materials or equipment salesperson, inspector, drafter or structural detailer. Graduates of this program may receive credit toward qualifying to be a land surveyor. They may also continue their education toward a bachelor's degree in engineering technology.

Job Opportunities

Survey Party Chief	Field Engineering Technician
Materials Test Technician	Construction Inspector
Equipment or Materials Salesperson	Estimator
Civil Drafter or Structural Detailer	Construction Foreman

CIVIL ENGINEERING TECHNOLOGY
Associate in Applied Science Degree

			Credit	
			Hrs.	
This Program Consists of:				
Major Courses (CIV, SUR Prefixed Courses)			68	
Related and General Education Courses			54	
Including:				
	Communications		12	
	Humanities/Fine Arts		3	
	Natural Sciences/Mathematics		26	
	Social Science		6	
	Other		7	
Electives			<u>3</u>	
TOTAL			125	
			Hrs. Per Week	
			Class	Credit
			Lab	Hrs.
First Quarter (Fall)				
CIV	101	Calculator Operation		
		for Engineering Problems	1	2
CIV	217	Introduction to Construction Technology	2	4
SUR	101	Surveying I	2	4
ENG	101	Fundamentals of English	3	3
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>5</u>
			13	18
Second Quarter (Winter)				
CIV	230	Hydraulics	2	3
DFT	110	Engineering Graphics	2	4
CAS	101	Introduction to Computing Concepts	2	3
ENG	102	Composition	3	3
MAT	102	Algebra and Trigonometry II	<u>5</u>	<u>5</u>
			14	18

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Third Quarter (Spring)					
CIV	202	Properties of Soils	2	2	3
SUR	102	Surveying II	2	6	4
DFT	104	Civil Drafting	2	4	4
ENG	204	Oral Communications	3	0	3
MAT	103	Analytical Geometry and Calculus	<u>5</u>	<u>0</u>	<u>5</u>
			14	12	19
Fourth Quarter (Summer)					
CIV	231	Hydrology	2	2	3
SUR	210	Construction Surveying	1	3	2
CHM	102	Engineering Chemistry	2	2	3
DFT	220	Computer Aided Drafting	1	6	3
PHY	111	Physics I - Mechanics	<u>3</u>	<u>2</u>	<u>4</u>
			9	15	15
Fifth Quarter (Fall)					
CIV	114	Statics	2	4	4
CIV	220	Project Planning	2	2	3
CIV	221	Asphalt	2	2	3
CIV	223	Codes, Contracts, and Specifications	2	2	3
PHY	112	Physics II-Rotation and Matter	<u>3</u>	<u>2</u>	<u>4</u>
			11	12	17
Sixth Quarter (Winter)					
CIV	216	Strength of Materials	2	4	4
CIV	218	Properties of Plain Portland Concrete	2	2	3
CIV	225	Construction Estimating	2	4	4
CIV	232	Water and Waste Treatment	2	2	3
SOC	201	Social Problems	<u>3</u>	<u>0</u>	<u>3</u>
			11	12	17
Seventh Quarter (Spring)					
CIV	219	Steel and Timber Construction	2	4	4
CIV	224	Reinforced Portland Concrete	2	2	3
CIV	228	Relations and Ethics	1	2	2
ENG	103	Report Writing	3	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			11	8	15
Program Totals			83	81	125*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

This program is also offered in the evening schedule. See Evening Programs listing.

DIESEL VEHICLE MAINTENANCE

The Diesel Vehicle Maintenance curriculum provides a program for developing the basic knowledge and skills needed in diesel vehicle maintenance. Manual skills are developed in practical shop work.

The use of diesel engines is found in farm and construction equipment, electric generators, trucks, buses, trains, automobiles, and ships. Many diesel vehicle mechanics specialize in maintenance and repair of equipment; others specialize in rebuilding engines.

Diesel vehicle mechanics are instructed through class assignments, discussion and shop practice to maintain and repair engines, chassis and suspensions, and power trains used to power farm equipment, construction equipment, buses and trucks. They use handtools, precision measuring and testing instruments, and power tools in overhauling and maintaining diesel powered equipment.

Job Opportunities

- Diesel Mechanic
- Diesel-Mechanic Apprentice
- Diesel-Mechanic Helper
- Fuel-Injection Servicer
- Repairer, Heavy
- Construction-Equipment-Mechanic Helper
- Spring-Repairer Helper, Hand
- Maintenance Mechanic Helper
- Tractor-Mechanic Helper

Opportunities in heavy equipment maintenance will be found within dealerships, trucking companies, public transportation companies, general contractors, farm implement dealers, and industries that maintain heavy equipment.

DIESEL VEHICLE MAINTENANCE

Diploma

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
First Quarter (Fall)						
HEV	1101	Diesel Engine Theory and Practice	5	0	12	9
MAT	1101	Fundamentals of Mathematics	5	0	0	5
MEC	1101	Elementary Hydraulic Principles	<u>2</u>	<u>3</u>	<u>0</u>	<u>3</u>
			12	3	12	17
Second Quarter (Winter)						
HEV	1102	Diesel-Electrical, Fuel, Lubricating and Cooling Systems	7	0	12	11
PHY	1101	Applied Science I	3	2	0	4
WLD	1101	Basic Welding	<u>1</u>	<u>2</u>	<u>0</u>	<u>2</u>
			11	4	12	17
Third Quarter (Spring)						
HEV	1103	Diesel-Hydraulic Systems, Steering, Suspension, Braking, Power Train, Injector Testing, and Servicing	6	0	12	10
ENG	1102	Communication Skills	3	0	0	3
PHY	1102	Applied Science II	3	2	0	4
MES	1112	Machine Shop Processes	<u>1</u>	<u>0</u>	<u>3</u>	<u>2</u>
			13	2	15	19

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Fourth Quarter (Summer)						
HEV	1105	Diesel Service and Repair	4	0	6	6
HEV	1107	Power Train Systems	4	0	6	6
ECO	1107	Consumer Economics	3	0	0	3
PSY	1101	Human Relations	3	0	0	3
			<u>14</u>	<u>0</u>	<u>12</u>	<u>18</u>
Program Totals			50	9	51	71

DRAFTING AND DESIGN ENGINEERING TECHNOLOGY

The Drafting and Design Engineering Technology curriculum prepares technicians for drafting and/or designing mechanical parts, mechanisms, and mechanical systems.

Emphasis is placed on developing the student's ability to think and plan as well as on the development of drafting and design skills. Computer Aided Drafting (CAD) and conventional equipment will be used to produce drawings such as sectional views, subassemblies and major components of machinery, and mechanical systems.

Coursework includes the study of technical drafting and design, materials, applied mechanics, mechanical systems, manufacturing methods, manufacturing processes, applied physics, technical mathematics, descriptive geometry, computer applications, and written and oral communications.

Drafting and design engineering technicians are employed in many types of manufacturing, fabrication, research and development, and service industries.

Job Opportunities

Mechanical Design Technician
Mechanical Drafter
Tool Design Drafter
CAD Drafter/Designer
Detail Drafter

CADD

This program includes Computer Aided Drafting and Design courses to prepare graduates for employment in industries using computers in Drafting and Design applications.

DRAFTING AND DESIGN ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

This Program Consists of:	Credit Hrs.
Major Courses (DFT Prefixed Courses)	70
Related and General Education Courses	51
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	27
Social Science	6
Other	3
Electives	<u>3</u>
TOTAL	124

			Hrs. Per Week	Credit
			Class	Lab Hrs.
First Quarter (Fall)				
DFT	101	Drafting	2	4
ENG	101	Fundamentals of English	3	0
MAT	101	Algebra and Trigonometry I	5	0
MEC	111	Manufacturing Processes I	3	2
SOC	201	Social Problems	<u>3</u>	<u>0</u>
			16	6
				19

Second Quarter (Winter)				
DFT	102	Drafting	2	4
ENG	102	Composition	3	0
MAT	102	Algebra and Trigonometry II	5	0
MEC	211	Engineering Materials	3	2
PHY	111	Physics I-Mechanics	<u>3</u>	<u>2</u>
			16	8
				20

Third Quarter (Spring)				
DFT	103	Drafting	2	4
DFT	220	Computer Aided Drafting	1	6
ENG	204	Oral Communications	5	0
MAT	204	Applied Mathematics	5	0
PHY	112	Physics II-Rotation and Matter	<u>3</u>	<u>2</u>
			14	12
				19

Fourth Quarter (Summer)				
DFT	204	Descriptive Geometry	1	6
CAS	101	Introduction to Computing Concepts	2	2
MEC	101	Machine Processes	2	4
MEC	105	Statics	3	2
MEC	230	Industrial Motor Controls	<u>4</u>	<u>2</u>
			12	16
				19

Fifth Quarter (Fall)				
DFT	205	Design Drafting II	2	6
DFT	221	Advanced Computer Aided Drafting and Design	1	6
MEC	205	Strength of Materials	3	2
PHY	113	Physics III-Electricity and Magnetism	<u>3</u>	<u>2</u>
			9	16
				15

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Sixth Quarter (Winter)					
DFT	201	Design Drafting I	2	6	4
DFT	211	Mechanisms and Kinematic Design	2	6	4
ENG	103	Report Writing	3	0	3
MEC	235	Hydraulics and Pneumatics	<u>3</u>	<u>2</u>	<u>4</u>
			10	14	15
Seventh Quarter (Spring)					
DFT	206	Design Drafting III	2	6	4
DFT	222	Computer Aided Manufacturing	2	6	4
PHI	101	Ethics and Human Values	3	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			10	12	14
Program Totals			87	84	124*

MAT 103 may be substituted for MAT 204.

This program is also offered in the evening schedule. See Evening Programs listing.

*The credit hours total includes the minimum of three (3) credit hours of non-major electives that must be taken before graduation in addition to the stated required courses.

ELECTRONICS ENGINEERING TECHNOLOGY

The Electronics curriculum provides a basic background in electronic related theory, with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may work as assistants to engineers or as liaisons between engineers and skilled craftspersons.

The electronics technician may start in one or more of the following areas: research, design, development, production, maintenance or sales. The graduate may begin as an electronics technician, an engineering aide, laboratory technician, supervisor or equipment specialist.

Job Opportunities

Electronics Technician
Electrical Tester
Electronics Engineering Technician
Electronics Mechanic
Electronic Sales and Service Technician

ELECTRONICS ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

This Program Consists of:	Credit Hrs.
Major Courses (ELN Prefixed Courses)	67
Related and General Education Courses	57
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	27
Social Science	3
Other	12
Electives	<u>3</u>
TOTAL	127

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
First Quarter (Fall)				
ELC	101	Fundamentals of D.C.	4	6
DFT	110	Engineering Graphics	2	4
ELN	110	Technical Documentation	1	2
ENG	101	Fundamentals of English	3	3
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>5</u>
			15	20

Second Quarter (Winter)				
ELC	102	Fundamentals of A.C.	4	6
DFT	220	Computer Aided Drafting	1	3
ENG	102	Composition	3	3
MAT	102	Algebra and Trigonometry II	5	5
PHY	111	Physics I - Mechanics	<u>3</u>	<u>4</u>
			16	21

Third Quarter (Spring)				
ELN	104	Semiconductor Devices	4	6
ELN	111	Fabrication Techniques	1	3
MAT	103	Analytical Geometry and Calculus	5	5
(MAT	151	Calculus and Analytic Geometry I	5	5)
PHY	112	Physics II - Rotation and Matter	<u>3</u>	<u>4</u>
			13	18

Fourth Quarter (Summer)				
ELN	201	Linear Integrated Circuits	4	6
PHY	114	Physics IV - Light, Sound and Wave Phenomena	3	4
ENG	103	Report Writing	<u>3</u>	<u>3</u>
			10	13

Fifth Quarter (Fall)				
ELN	202	Communications Systems	4	6
ELN	203	Digital Fundamentals	4	6
ELN	210	Analytic Troubleshooting	1	2
ENG	204	Oral Communications	<u>3</u>	<u>3</u>
			12	17

			Hrs. Per Week	Credit
			Class	Lab Hrs.
Sixth Quarter (Winter)				
ELN	204	Digital Applications	4	4 6
ELN	223	Microprocessor Principles	4	4 6
PSY	206	Applied Psychology	3	0 3
			11	8 15
Seventh Quarter (Spring)				
ELN	224	Microprocessor Interfacing	4	4 6
ELN	225	Industrial Controls	4	4 6
MEC	230	Industrial Motor Controls	4	2 5
			12	10 17
Program Totals			89	66 127*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

This program is also offered in the evening schedule. See Evening Programs listing.

MACHINIST

The Machinist curriculum gives individuals the opportunity to acquire basic skills and related technical information necessary to gain employment in the metalworking industries. The machinist is a skilled metalworker who shapes metal by using machine tools and hand tools. Machinists must be able to set up and operate the machine tools found in a modern shop. Computer Numerical Control (CNC) may be integrated into various phases of the curriculum or as specialized courses.

The machinist is able to select the proper tools and materials required for each job and to plan the cutting and finishing operations in their proper order so that the work can be finished according to blueprints or written specifications. The machinist makes computations relating to dimensions of work, tooling, feeds, and speeds of machining. Precision measuring instruments are used to measure the accuracy of work. The machinist also must know the characteristics of metals so that annealing and hardening of tools and metal parts can be accomplished in the process of turning a block of metal into an intricate precise part.

Advanced Diploma (Evening Schedule Only)

Students who continue through the advanced diploma level of the machinist curriculum will be able to refine basic machining skills and gain more experience in CNC machining and other technologies.

Job Opportunities

Entry Level

Machinist Apprentice
Tool and Die Maker Apprentice
Machine Set-Up Operator
Quality Control Technician
Production Machine Operator
CNC Set-Up Operators

Advanced Level

Machinist
Maintenance Machinist

MACHINIST

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
MES	1101	Machine Shop I	3	0	12	7
BPR	1104	Blueprint Reading: Mechanical	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
PSY	1101	Human Relations	3	0	0	3
			12	2	12	17
Second Quarter (Winter)						
MES	1102	Machine Shop II	3	0	12	7
BPR	1105	Blueprint Reading: Mechanical	1	2	0	2
ENG	1102	Communication Skills	3	0	0	3
MAT	1103	Geometry	3	0	0	3
PHY	1100	Industrial Science	3	2	0	4
			13	4	12	19
Third Quarter (Spring)						
MES	1103	Machine Shop III	3	0	12	7
MES	1170	Introduction to CNC Machining	1	2	0	2
BPR	1106	Blueprint Reading: Mechanical	1	2	0	2
CAS	101	Introduction to Computing Concepts	2	2	0	3
MAT	1104	Trigonometry	3	0	0	3
MEC	1115	Treatment of Ferrous & Non-Ferrous Metals	1	0	3	2
			11	6	15	19
Fourth Quarter (Summer)						
MES	1104	Machine Shop IV	2	0	6	4
MES	1136	Computer-Aided Machining	2	6	0	5
MES	1171	Operation of CNC Machines	2	2	0	3
MAT	1123	Machinist Mathematics	3	0	0	3
WLD	1101	Basic Welding	1	2	0	2
			10	10	6	17
Program Totals			46	22	45	72

This program is also offered in the evening schedule. See Evening Programs listing.

MECHANICAL ENGINEERING TECHNOLOGY

The Mechanical Engineering Technology curriculum prepares technicians to assist engineers in the design and development of machinery and other mechanical equipment and parts and to perform other activities which require technical knowledge of factors such as tolerances, stress, strains, friction and vibration. The scope of subject matter covered prepares the graduate for employment in greatly diversified branches of the mechanical field.

The graduate may wish to work with testing experimental machinery and equipment and analyzing the results. Typical of such devices are internal combus-

tion engines, steam turbines, jet and rocket engines, nuclear reactors, refrigeration and air conditioning equipment, missiles, spacecraft, marine equipment, motor vehicles, railroad equipment and machines for specialized industries such as textile mills. Another specialty area graduates may wish to pursue is that of the tool designer. Tool designers design tools and devices for the mass production of manufactured articles. They may also work with the instrumentation and design of machine tools or in equipping plants or mills which require special construction to accommodate power-producing or transmitting machinery.

Job Opportunities

Mechanical Engineering Technician	Tester
Mechanical Technician	Numerical Control Tool Programmer
Tool Design Drafter	Heat Transfer Technician
Mechanical Equipment	Tool Designer
Engineering Assistant	Mechanical Design Technician
Metallurgical Technician	Die Designer
Metallurgical Laboratory Assistant	Test Technician

MECHANICAL ENGINEERING TECHNOLOGY
Associate in Applied Science Degree

	Credit
This Program Consists of:	Hrs.
Major Courses (MEC Prefixed Courses)	66
Related and General Education Courses	59
Including:	
Communications	15
Humanities/Fine Arts	3
Natural Sciences/Mathematics	23
Social Science	3
Other	15
Electives	<u>3</u>
TOTAL	128

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
MEC	211	Engineering Materials	3	2	4
DFT	110	Engineering Graphics	2	4	4
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
			13	6	16
Second Quarter (Winter)					
MEC	111	Manufacturing Processes I	3	2	4
CAS	101	Introduction to Computing Concepts	2	2	3
ENG	102	Composition	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
PHY	111	Physics I - Mechanics	3	2	4
			16	6	19

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
Third Quarter (Spring)				
MEC	105	Statics	3	4
MEC	235	Hydraulics and Pneumatics	3	4
ENG	204	Oral Communications	3	3
MAT	103	Analytical Geometry and Calculus	5	5
PHY	112	Physics II - Rotation and Matter	<u>3</u>	<u>4</u>
			17	20
Fourth Quarter (Summer)				
MEC	101	Machine Processes	2	4
-or-				
MEC	110	Supervised Work Experience	0	3
ELC	101	Fundamentals of DC	4	6
ENG	107	Technical Composition	<u>3</u>	<u>3</u>
			9 (7)	13 (12)
Fifth Quarter (Fall)				
MEC	112	Manufacturing Processes II	2	4
MEC	205	Strength of Materials	3	4
DFT	220	Computer Aided Drafting	1	3
PSY	206	Applied Psychology	3	3
TDT	101	Geometric Tolerances and Inspection Procedures	<u>1</u>	<u>2</u>
			10	16
Sixth Quarter (Winter)				
MEC	206	Dynamics	4	4
MEC	212	Automation I	4	6
MEC	230	Industrial Motor Controls	4	5
ENG	103	Report Writing	3	3
TDT	105	Manufacturing Cost Analysis	<u>1</u>	<u>2</u>
			16	20
Seventh Quarter (Spring)				
MEC	208	Machine Design	3	5
MEC	214	Automation II	3	6
MEC	216	Vibrational Analysis and Preventive Maintenance	2	4
DFT	221	Advanced Computer Aided Drafting and Design	<u>1</u>	<u>3</u>
			9	18
Program Totals			90 (88)	128 (127)*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

This program is offered in the evening schedule on alternate years. See Evening Programs listing.

RESIDENTIAL CARPENTRY

The Residential Carpentry curriculum trains students to construct and make repairs to residential structures using standard building materials and hand and power tools. This curriculum is designed to teach carpentry skills and a general knowledge of residential construction. Instruction also includes the study of mathematics, blueprint reading, building codes, and energy efficient construction.

Graduates will have a working knowledge of building materials, concrete form construction, rough framing, roofing, stair construction, insulation, and the application of interior and exterior trim.

Graduates should qualify for employment in the residential building construction field as rough carpenters, framing carpenters, roofers, maintenance carpenters, and other related job titles.

Job Opportunities

Entry Level

- Apprentice Carpenter
- Maintenance Carpenter
- Framing Carpenter
- Trim Carpenter
- Roofer

RESIDENTIAL CARPENTRY
Diploma

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
First Quarter (Fall)						
CAR	1102	Cabinetmaking I	5	0	15	10
BPR	1107	Blueprint Reading:				
		Construction Trades	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
			11	2	15	17
Second Quarter (Winter)						
CAR	1101	Carpentry I	5	0	6	7
CAR	1104	Cabinetmaking II	0	0	9	3
BPR	1109	Blueprint Reading:				
		Construction Trades	1	2	0	2
ENG	1102	Communication Skills	3	0	0	3
MAT	1103	Geometry	3	0	0	3
			12	2	15	18
Third Quarter (Spring)						
CAR	1103	Carpentry II	6	0	15	11
DFT	1127	Construction Trades: Drafting I	2	2	0	3
PSY	1101	Human Relations	3	0	0	3
			11	2	15	17
Fourth Quarter (Summer)						
CAR	1105	Advanced Carpentry Projects	2	0	24	10
BUS	1103	Small Business Operations	3	0	0	3
DFT	1128	Construction Trades: Drafting II	2	2	0	3
			7	2	24	16
Program Totals			41	8	69	68

This program is also offered in the evening schedule. See Evening Programs listing.

SURVEYING TECHNOLOGY

This program is designed to provide training for technicians in the many areas of surveying. Surveyors are involved in land surveying, route surveying, photogrammetry, mapping, and other areas of land description and measurements. Nearly all construction of buildings, bridges, dams, highways, airfields, and other engineered projects requires one or more types of surveying.

Students will be trained as technicians to work with skilled professionals as instrument persons, party chiefs, surveying aids, highway surveyors, mappers, and in many other surveying activities. Graduates of this program will be prepared to pursue the requirements necessary to become a registered land surveyor.⁽¹⁾

Job Opportunities

Surveying Technician
Mapper
Drafter
Surveying Party Chief
Construction Layout Technician
Deed Research Technician
Instrument Person
Land Surveying Technician
Highway Surveying Technician

⁽¹⁾Note: Two of the five years of the experience requirement for registration by the Registration Board will be given to graduates of this program.

SURVEYING TECHNOLOGY Associate in Applied Science Degree

This Program Consists of:	Credit Hrs.
Major Courses (CIV, SUR Prefixed Courses)	66
Related and General Education Courses	51
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	23
Social Science	6
Other	7
Electives	<u>3</u>
TOTAL	120

			Hrs. Per Week		Credit Hrs.
			Class	Lab	
First Quarter (Fall)					
CIV	101	Calculator Operation for Engineering Problems	1	2	2
SUR	101	Surveying I	2	6	4
CIV	217	Introduction to Construction Technology	2	6	4
ENG	101	Fundamentals of English	3	0	3
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>0</u>	<u>5</u>
			13	14	18

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
Second Quarter (Winter)				
CIV	230	Hydraulics	2	3
CAS	101	Introduction to Computing Concepts	2	3
DFT	110	Engineering Graphics	2	4
ENG	102	Composition	3	3
MAT	102	Algebra and Trigonometry II	<u>5</u>	<u>5</u>
			14	18
Third Quarter (Spring)				
SUR	102	Surveying II	2	4
CIV	202	Properties of Soils	2	3
DFT	104	Civil Drafting	2	4
ENG	204	Oral Communications	3	3
MAT	103	Analytical Geometry and Calculus	<u>5</u>	<u>5</u>
			14	19
Fourth Quarter (Summer)				
SUR	103	Route Surveying	2	4
SUR	104	Topographic Surveys/Photogrammetry	2	4
SUR	210	Construction Surveying	1	2
CIV	231	Hydrology	2	3
PHY	114	Physics IV-Light, Sound and Wave Phenomena	<u>3</u>	<u>4</u>
			10	17
Fifth Quarter (Fall)				
SUR	205	Surveying Research	1	2
CIV	220	Project Planning	2	3
CIV	223	Codes, Contracts, and Specifications	2	3
DFT	220	Computer Aided Drafting	1	3
PHY	113	Physics III - Electricity and Magnetism	<u>3</u>	<u>4</u>
			9	15
Sixth Quarter (Winter)				
SUR	206	Equipment Calibration	0	1
SUR	207	Field and Office Practice	1	2
SUR	209	Surveying Law	3	3
SUR	214	Subdivision Planning	2	4
SOC	201	Social Problems	<u>3</u>	<u>3</u>
			9	13
Seventh Quarter (Spring)				
SUR	204	Advanced Surveying	2	4
SUR	215	Senior Project	0	2
CIV	228	Relations and Ethics	1	2
ENG	103	Report Writing	3	3
PSY	206	Applied Psychology	<u>3</u>	<u>3</u>
			9	14
Program Totals			78	120*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

This program is also offered in the evening schedule. See Evening Programs listing.

TOOL, DIE AND MOLD MAKING

Students accepted for the V-048 Tool, Die and Mold Making curriculum must have completed the V-032 Machinist curriculum or be able to demonstrate journeyman-level machinist skills.

The Tool, Die and Mold Making curriculum prepares machinists for the machining of tools, dies and molds for the mass production of parts. These parts may be produced by punching, stamping or molding them into the required sizes and shapes. It is the responsibility of tool, die and mold makers to produce the special tools and fixtures for these production operations. They may also produce the gages and other inspection tools used in checking mass produced parts.

Students enrolling in the Tool, Die and Mold Making program should gain the necessary skills and related information to make it possible for them to obtain entry-level employment in this field. Typical jobs which might be secured in the manufacturing field include tool maker trainee, die maker trainee, mold maker trainee, piece part inspector and tool inspector. Tool, die and mold makers analyze a variety of specifications, lay out metal stock and set up and operate machine tools. They fit and assemble parts to make and repair metal working dies, molds, cutting tools, jigs, fixtures, and gages. They compute dimensions, decide on machining to be done and plan layout and assembly operations.

Job Opportunities

Tool Maker Trainee	Mold Maker Apprentice
Tool Maker Apprentice	Piece Part Inspector
Die Maker Trainee	Tool Inspector
Die Maker Apprentice	Gage and Instrument
Mold Maker Trainee	Inspector

Specific Entrance Requirements

To advance from the Machinist curriculum to the Tool, Die and Mold Making curriculum, the student must have obtained a grade of "B" or better in MES 1103, MES 1104, MAT 1104, and MAT 1123, or be able to demonstrate journeyman-level machinist skills. Any exceptions to these requirements will be decided by a committee chaired by the Chairperson of the Machining Technology Department.

TOOL, DIE AND MOLD MAKING*
Technical Diploma

				Hrs. Per Week			Credit
				Class	Lab	Shop	Hrs.
Fifth Quarter (Fall)							
TDM	1201	Machine Processes I		3	0	12	7
DFT	1207	General Machine Drafting		2	4	0	4
MAT	1203	Trigonometry		3	0	0	3
				8	4	12	14

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
Sixth Quarter (Winter)						
TDM	1202	Machine Processes II	3	0	12	7
TDM	1205	Fundamentals of Mold Construction	3	2	0	4
MAT	1204	Compound Angles	3	0	0	3
MEC	1203	Metallurgy	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			12	2	12	17
Seventh Quarter (Spring)						
TDM	1203	Die and Mold Construction	1	0	3	2
TDM	1204	Machine Processes III	3	0	12	7
BPR	1208	Blueprint Reading: Tool and Die	1	4	0	3
MEC	1209	Hydraulics and Pneumatics	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			8	4	15	15
Eighth Quarter (Summer)						
TDM	1206	Machine Processes IV	3	0	12	7
TDM	1207	Special Problems and Molding	3	4	0	5
DFT	1209	Tool Design and Planning	<u>2</u>	<u>4</u>	<u>0</u>	<u>4</u>
			8	8	12	16
Program Totals			36	18	51	62

*Students who have not completed the machinist curriculum must also take ENG 1102 and PSY 1101. Total Program credit hours 68.

This program is also offered in the evening schedule. See Evening Programs listing.

WELDING

The Welding curriculum gives students sound understanding of the principles, methods, techniques and skills essential for successful employment in the welding field and metals industry. Welders join metals by applying intense heat, and sometimes pressure to form a permanent bond between intersecting metals.

Welding offers employment in practically any industry: shipbuilding, automotive, aircraft, guided missiles, heavy equipment, railroads, construction, pipe fitting, production shops, job shops and many others.

Job Opportunities

Entry Level

Arc Welding
Arc Welding - Machine Operator
Gas Welding - Machine Operator
Gas Welding
Welder - Assembler
Combination Welder

Advanced Level

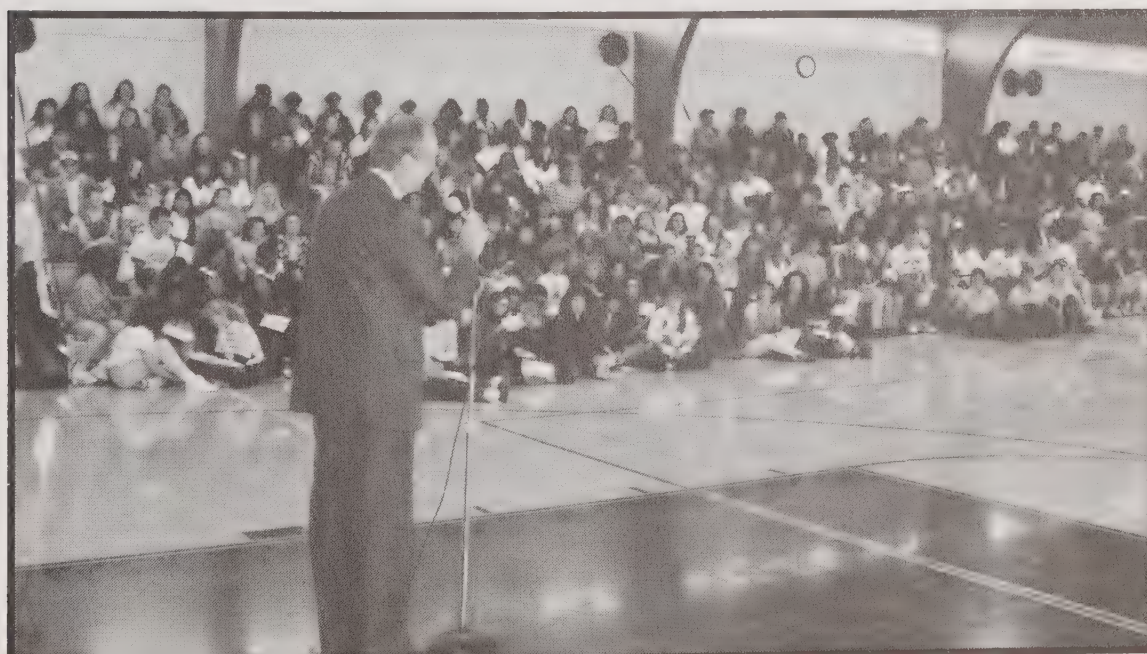
Layout Worker I
Welder - Fitter

WELDING

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
WLD	1120	Oxyacetylene Welding and Cutting	3	0	12	7
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
MAT	1101	Fundamental of Mathematics	5	0	0	5
MEC	1124	Metallurgy	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			12	2	12	17
Second Quarter (Winter)						
WLD	1121	Arc Welding	3	0	12	7
BPR	1117	Blueprint Reading: Welding	1	2	0	2
ELC	1119	Electricity for Welders	3	2	0	4
ENG	1102	Communication Skills	3	0	0	3
MAT	1103	Geometry	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			13	4	12	19
Third Quarter (Spring)						
WLD	1112	Mechanical Testing & Inspection	1	0	3	2
WLD	1122	Commercial & Industrial Practices	3	0	9	6
WLD	1123	Inert Gas Welding	1	0	3	2
DFT	1126	Pattern Development & Layout	0	3	0	1
PSY	1101	Human Relations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			8	3	15	14
Fourth Quarter (Summer)						
WLD	1124	Pipe Welding	3	0	12	7
WLD	1125	Certification Practices	3	0	6	5
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
MES	1112	Machine Shop Processes	<u>1</u>	<u>0</u>	<u>3</u>	<u>2</u>
			10	0	21	17
Program Totals			43	9	60	67

This program is also offered in the evening schedule. See Evening Program Listing.



President Bailey welcomes students to High School Visitation Day.

COOPERATIVE AGREEMENTS

Asheville-Buncombe Technical Community College has cooperative academic agreements with other education institutions. The agreements provide for dual/shared enrollment of students.

Law Enforcement Technology

The College has agreements with area high schools for instruction in Law Enforcement Technology for juniors and seniors. Students study law enforcement courses for a year and earn a unit of high school credit and 15 quarter hours of college credit if they enroll in the A-B Tech Law Enforcement Technology program.



A walk across campus.

COLLEGE TRANSFER PROGRAMS



COLLEGE TRANSFER PROGRAMS

	College Transfer
Recommended High School Courses	Individuals who do not have required credits can enter A-B Tech as provisional students in the College Transfer program.
A-B Tech Entrance Requirements	Algebra I & II Geometry Biology 1 additional Lab Science (Chemistry or Physics) Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall Can take single courses any quarter
Degree	Associate in Arts Associate in Science
Employment Opportunities	Transfer at junior level to four-year institutions

ARTS AND SCIENCES

The Division of Arts and Sciences is supportive of all curricula and offers the College Transfer programs on a day and evening schedule. The Division of Arts and Sciences includes the following departments: Biology, Chemistry and Physics, Guided Studies, English and Foreign Languages, Humanities, Mathematics, and Physical Education.

COLLEGE TRANSFER PROGRAMS

Associate in Arts (A.A.) Degree

The Associate in Arts degree program is recommended for students who plan to transfer to senior colleges and universities to continue study in art, education, humanities, music, philosophy, social sciences, or other areas leading to a Bachelor of Arts (B.A.) degree.

The program requires students to have good basic skills upon admission and to achieve a high level of competency in the various courses constituting the program.

Asheville-Buncombe Technical Community College endeavors to facilitate the transfer of credit to senior institutions. However, the College cannot assure that all of its courses will actually transfer to a given senior institution or for a specific program. Therefore, students should plan their program in close coordination with the senior institution to which they plan to transfer. Courses listed in the catalog are offered upon sufficient enrollment and may not be available every quarter. Day and evening schedules should be reviewed as the program sequence is planned. Students who wish to enroll in individual courses without planning to complete graduation requirements may register as special students.

Students who complete the Associate in Arts degree may transfer to senior institutions to pursue majors such as:

Business Administration
Business Education
Elementary Education
English
Foreign Languages
Geography
History
International Studies
Journalism
Law

Law Enforcement
Management
Physical Education
Political Science
Psychology
Recreation
Secondary Education
Social Work
Sociology
Speech

SPECIFIC ENTRANCE REQUIREMENTS

- 1. General College admission requirements.
- 2. Applicants who have not completed the courses specified below may be admitted as provisional students and will be placed in courses appropriate for their educational background.

<u>High School</u>		<u>A-B Tech</u>
a. Algebra I	or	MAT 096 and 097
b. Algebra II	or	MAT 098 and 099
c. Geometry	or	MAT 091
d. Chemistry	or	CHM 100
or		
Physics		

CURRICULUM REQUIREMENTS FOR THE
Associate in Arts (A.A.) Degree

Requirements (68 Quarters Hours)	Quarter Hours
Communications ENG 153, 154	10
Computing	3
Humanities and Fine Arts ENG 204 and courses selected from Art, English, History, Music, and Philosophy	18
Mathematics Courses should be selected according to proposed major. MAT 101 is required.	10
Science Courses selected must include one (1) three-quarter sequence of a laboratory science. Options include transfer courses in biology, chemistry, and physics.	12

Science course sequences may consist of :

- Biology: BIO 101, 102, 103, or BIO 201 and any two of the following: BIO 202, 203, 204, 205
- Chemistry: CHM 150, 151, 152, CHM 200, 201, 202, or CHM 210, 211, 212
- Physics: Three of the following four courses - PHY 111, 112, 113, 114, or PHY 201, 202, 203

Note: The recommended sequences are Underlined.

Social Science	12
Courses selected from Anthropology, Geography, Political Science, Psychology, and Sociology	
Physical Education	3
Required Electives	28
Preprofessional Cognate* or General Courses	
Total Quarter Hours	96

*These preprofessional cognate and general courses should be selected carefully in coordination with the senior institution.

Major area courses for college transfer programs are defined as courses offered by the Arts and Sciences Division and require a minimum grade of C for all courses submitted for graduation.

ASSOCIATE IN ARTS DEGREE

Day Program Model of Quarterly Course Sequence*

First Quarter (Fall)			Hrs Per Week		Credit
			Class	Lab	Hrs.
ENG	153	Grammar and Introduction to Literature	5	0	5
HUM		Humanities Elective	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
SCI		Science Sequence - Course I	3	3	4
			16	3	17

*Course sequence and hours may vary depending on courses selected.

			Hrs Per Week		Credit
			Class	Lab	Hrs.
Second Quarter (Winter)					
ENG	154	Composition and Research	5	0	5
HUM		Humanities Elective	3	0	3
MAT		Mathematics Elective	5	0	5
SCI		Science Sequence - Course II	<u>3</u>	<u>3</u>	<u>4</u>
			16	3	17
Third Quarter (Spring)					
GEN		General Elective	3	0	3
HUM		Humanities Elective	3	0	3
PED		Physical Education Elective	0	3	1
SCI		Science Sequence - Course III	3	3	4
SOC		Social Science Elective	<u>3</u>	<u>0</u>	<u>3</u>
			12	6	14
Fourth Quarter (Fall)					
CAS	101	Introduction to Computing Concepts	2	2	3
ENG	204	Oral Communications	3	0	3
GEN		General Elective	3	0	3
HUM		Humanities Elective	3	0	3
PED		Physical Education Elective	0	3	1
SOC		Social Science Elective	<u>3</u>	<u>0</u>	<u>3</u>
			14	5	16
Fifth Quarter (Winter)					
GEN		Two General Electives	7	0	7
HUM		Humanities Elective	3	0	3
PED		Physical Education Elective	0	3	1
SOC		Social Science Elective	<u>3</u>	<u>0</u>	<u>3</u>
			13	3	14
Sixth Quarter (Spring)					
GEN		Four General Electives	15	0	15
SOC		Social Science Elective	<u>3</u>	<u>0</u>	<u>3</u>
			18	0	18
Program Totals			89	20	96

This program is also offered in the evening schedule. See Evening Program listing.

Associate in Science (A.S.) Degree

The College Transfer Program is for students who plan to earn the Associate in Science (A.S.) degree after completing two years (minimum 96 quarter hours) of liberal arts and preprofessional education. The A.S. degree program is recommended for students who plan to transfer to senior colleges and universities to continue study in business, computing, education, engineering, health, mathematics, science, or other areas leading to a Bachelor of Science (B.S.) degree.

The program requires students to have good basic skills upon admission and to achieve a high level of competency in the various courses constituting the program. The A.S. program emphasizes mathematics and science.

Asheville-Buncombe Technical Community College endeavors to facilitate the transfer of credit to senior institutions. However, the College cannot assure that all of its courses will actually transfer to a given senior institution or for a specific program. Therefore, students should plan their program in close coordination with the senior institution to which they plan to transfer. Courses listed in the catalog are offered upon sufficient enrollment and may not be available every quarter. Day and evening schedules should be reviewed as the program sequence is planned. Students who wish to enroll in individual courses without planning to complete graduation requirements may register as special students.

Students who complete the Associate in Science degree may transfer to senior institutions to pursue majors such as:

Agriculture	Forestry	Pharmacy
Biology	Industrial Arts	Physics
Chemistry	Mathematics	Public Health
Computer Science	Medicine	Science
Dentistry	Nursing	Textiles
Engineering	Optometry	Veterinary Medicine

SPECIFIC ENTRANCE REQUIREMENTS

1. General College admission requirements.
2. Applicants who have not completed the courses specified below may be admitted as *provisional* students and will be placed in courses appropriate for their educational background.

<u>High School</u>		<u>A-B Tech</u>
a) Algebra I	or	MAT 096 and 097
b) Algebra II	or	MAT 098 and 099
c) Geometry	or	MAT 091
d) Chemistry	or	CHM 100
or		
Physics		

CURRICULUM REQUIREMENTS FOR THE**Associate in Science (A.S.) Degree**

Requirements (74 Quarter Hours)	Quarter Hours
Communications ENG 153, 154	10
Computing	3
Humanities and Fine Arts ENG 204 and courses selected from Art, English, History, Music, and Philosophy	6
Mathematics For most math/science programs, courses selected should include the Calculus sequence. MAT 151 and MAT 152 are required.	20
Science* For most math/science programs, courses selected must include two (2) three-quarter sequences (12 credit hours each) of laboratory science. Options include transfer courses in Biology, Chemistry, and Physics. Science course sequences may consist of: Biology: BIO 101, 102, 103, or <u>BIO 201 and any two of the following - BIO 202, 203, 204, 205</u> Chemistry: <u>CHM 200, 201, 202</u> , or CHM 210, 211, 212 Physics: Three of the following four courses PHY 111, 112, 113, 114 or <u>PHY 201, 202, 203</u> Note: The recommended sequences are underlined.	24
Social Science Courses selected from Anthropology, Geography, Political Science, Psychology, and Sociology	9
Physical Education	3
Required Electives (21 Quarter Hours) Preprofessional Cognate** or General Courses	21
Total Quarter Hours	96

* The two-three-quarter sequences of laboratory science that are required must be taken in two different disciplines.

** These preprofessional, cognate courses should be selected carefully and in coordination with the senior institution.

Major area courses for college transfer programs are defined as courses offered by the Arts and Sciences Division and require a minimum grade of C for all courses submitted for graduation.

ASSOCIATE IN SCIENCE DEGREE

Day Program Model of Quarterly Course Sequence*

			Hrs Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
CAS	101	Introduction to Computing Concepts	2	2	3
ENG	153	Composition and Introduction to Literature	5	0	5
MAT	150	Precalculus Mathematics	5	0	5
SCI		First Science Sequence - Course I	<u>3</u>	<u>3</u>	<u>4</u>
			15	5	17
Second Quarter (Winter)					
ENG	154	Composition and Research	5	0	5
MAT	151	Calculus and Analytic Geometry I	5	0	5
SCI		First Science Sequence - Course II	3	3	4
SOC		Social Science Elective	<u>3</u>	<u>0</u>	<u>3</u>
			16	3	17
Third Quarter (Spring)					
GEN		General Elective	3	0	3
MAT	152	Calculus II	5	0	5
PED		Physical Education Elective	0	3	1
SCI		First Science Sequence - Course III	3	3	4
SOC		Social Science Elective	<u>3</u>	<u>0</u>	<u>3</u>
			14	6	16
Fourth Quarter (Fall)					
ENG	204	Oral Communications	3	0	3
GEN		General Elective	3	0	3
MAT	202	Calculus III	5	0	5
PED		Physical Education Elective	0	3	1
SCI		Second Science Sequence - Course I	<u>3</u>	<u>2</u>	<u>4</u>
			14	5	16
Fifth Quarter (Winter)					
GEN		General Elective	3	0	3
HUM		Humanities Elective	3	0	3
MAT	203	Calculus IV Elective	5	0	5
PED		Physical Education Elective	0	3	1
SCI		Second Science Sequence - Course II	<u>3</u>	<u>2</u>	<u>4</u>
			14	5	16
Sixth Quarter (Spring)					
GEN		Two General Electives	7	0	7
SCI		Second Science Sequence - Course III	3	2	4
SOC		Social Science Elective	<u>3</u>	<u>0</u>	<u>3</u>
			13	2	14
Program Totals			86	26	96

*Course sequence and hours may vary depending on courses selected.

This program is also offered in the evening schedule. See Evening Programs listing.

GENERAL TECHNOLOGY CURRICULUM CORE

General Technology Curriculum Core is designed as a career mobility program for technical students to acquire the general education and related courses in subject areas such as humanities, communications, social sciences, and in theoretical and applied sciences such as biology, chemistry, physics, mathematics, general computer studies, and general graphics (drafting) that are foundation courses to specific curriculums in the technical field. After completion of this certificate curriculum, the student has job skills for occupations requiring communications skills and/or science and mathematics. The student may take this program as the first level in a specific technical curriculum as an intended objective component of that technical curriculum. Students may also take this program for transfer to a technical curriculum at another community college system institution either prior to or concurrently with enrollment at the institution at which they intend to pursue or are pursuing a technical curriculum degree.

Job Opportunities

Lab Assistance, research
Technicians Assistance
Employment Clerk
Customer Service Representative
Admissions evaluator (education)

GENERAL TECHNOLOGY CURRICULUM CORE

Certificate

			Hrs. Per Week			Credit
			Class	Lab	Hrs.	
RELATED COURSES						
BIO	101	Human Anatomy and Physiology I	4	3	0	5
BIO	102	Human Anatomy and Physiology II	4	3	0	5
Related Electives*						(14) (16)
						<u>24</u>

*Related Electives chosen according to occupational goals from curriculum courses offered by the College to total at least 24 quarter hours of degree-level credit for this section of course.

GENERAL EDUCATION

ENG	204	Oral Communications	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
SOC	201	Social Problems	3	0	0	3
General Education Electives**						<u>9</u>
						18

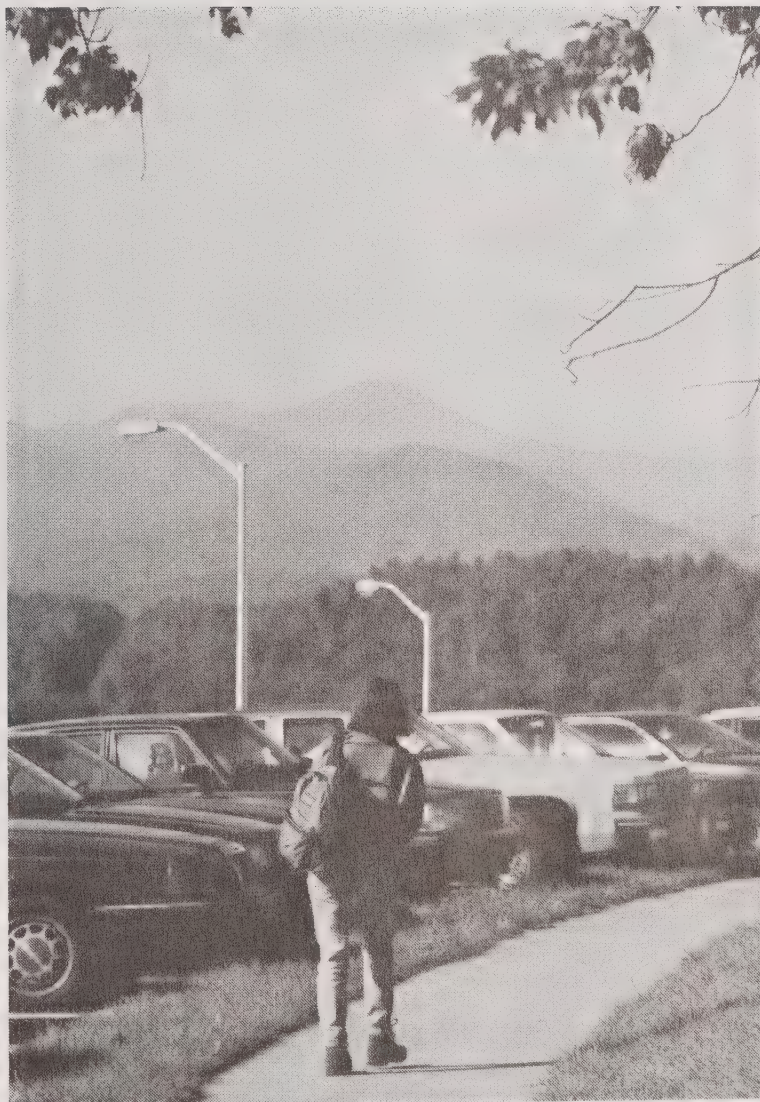
**A total of at least nine (9) quarter hours of degree-level credit of general education electives chosen according to occupational goals from English, social science, and/or humanities curriculum courses offered by the College.

ELECTIVES***

***In addition to the program requirements previously stated, a minimum of six (6) credit hours of electives must be selected from degree-level courses.

The total number of credit hours for this Certificate program is 48.

EVENING PROGRAMS



Most of the curricular classes offered in the day are also offered on a part-time basis in the evenings or on the weekends. Classes meet both on campus and at various off-campus sites. In addition to classes in the formatted program plans, many single classes are offered for students who seek personal or career advancements.

Beyond individual classes, students may *cluster* selected classes to meet more advanced goals. Any of these individually selected classes may be undertaken by *Unclassified Schedule* students on a space-available basis if prerequisites have been met.

Evening classes begin at 4:00 p.m. with the majority starting at 6:30 p.m.

Requirements for degree and diploma are the same for day and evening programs.

EVENING PROGRAMS IN ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

BASIC LAW ENFORCEMENT TRAINING

See day program listing for conditions of enrollment.

Certificate Awarded

			Hrs. Per Week			Credit Hrs.
Offered on Demand			Class	Lab	Skills	
BLE	100	Basic Law Enforcement	16	0	30	26

LAW ENFORCEMENT TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
LET	101	Introduction to Criminal Justice	5	0	5
PSY	101	Introduction to Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			8	0	8
Second Quarter (Winter)					
LET	102	Introduction to Criminology	5	0	5
ENG	101	Fundamentals of English	3	0	3
POL	103	State and Local Government	<u>4</u>	<u>0</u>	<u>4</u>
			12	0	12

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
Third Quarter (Spring)				
LET	115	Criminal Law I	3	3
EMS	100	Introduction to Emergency Medical Services	2	3
ENG	102	Composition	3	3
PSY	203	Abnormal Psychology	3	3
			<u>11</u>	<u>12</u>
Fourth Quarter (Summer)				
LET	205	Criminal Evidence	4	4
LET	216	Criminal Law II	3	3
MAT	110	General College Mathematics	5	5
			<u>12</u>	<u>12</u>
Fifth Quarter (Fall)				
LET	201	Motor Vehicle Law	3	3
LET	210	Criminal Investigation I	4	4
ENG	204	Oral Communications	3	3
PHO	201	Introduction to Photography	1	2
			<u>11</u>	<u>12</u>
Sixth Quarter (Winter)				
LET	211	Introduction to Criminalistics	4	5
LET	213	Criminal Investigation II	4	4
PSY	151	Applied Psychology for Law Enforcement	3	3
			<u>11</u>	<u>12</u>
Seventh Quarter (Spring)				
LET	110	Introduction to Juvenile Justice	5	5
LET	125	Judicial Process	4	4
LET	200	Crime Prevention	3	3
			<u>12</u>	<u>12</u>
Eighth Quarter (Summer)				
LET	202	Traffic Planning and Management	3	4
LET	217	Patrol Procedures	3	3
SOC	201	Social Problems	3	3
			<u>9</u>	<u>10</u>
Ninth Quarter (Fall)				
LET	212	Narcotics, Drugs, and Human Behavior	3	4
LET	220	Police Organization, Administration, and Supervision	5	5
			<u>8</u>	<u>9</u>
Tenth Quarter (Winter)				
LET	206	Community Relations	3	3
ENG	103	Report Writing	3	3
			<u>6</u>	<u>6</u>
Eleventh Quarter (Spring)				
PHI	101	Ethics and Human Values	3	3
			<u>11</u>	<u>11</u>
			<u>14</u>	<u>14</u>
Program Subtotals			103	119*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and eight (8) credit hours of approved Related Electives that must be taken before graduation in addition to the stated required courses.

Related Electives

*In addition to required courses, students must complete a minimum of eight (8) credit hours of approved Related Electives. These may be taken at any time during the program, providing the student has completed the proper prerequisites and has Departmental Approval of his/her schedule prior to registration.

Electives may be offered on the basis of results from demand surveys conducted early in the previous quarter. Related Electives may be scheduled from the courses indicated below.

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
AOT	100	Computer Keyboarding	1	2	0	2
BIO	101	Human Anatomy and Physiology	4	3	0	5
BLE	100	Basic Law Enforcement Training	8	0	0	8
(may serve as the RELATED ELECTIVE requirement)						
CHM	100	Introduction to Chemistry	3	3	0	4
LET	105	Introduction to Correction	4	0	0	4
LET	106	Probation and Parole	3	0	0	3
LET	107	Police Liability	3	0	0	3
LET	112	Legal Research	5	0	0	5
LET	250	Topics in Criminal Justice- Law Enforcement 1	5	0	0	5
MAT	160	Elementary Statistics	5	0	0	5
PSY	206	Applied Psychology	3	0	0	3

Internships of ten (10) contact hours per week per quarter may be completed by Criminal Justice students in partial fulfillment of the elective requirements. Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. A maximum of three (3) credit hours may be earned through internships. Prerequisite: Permission department chairperson.

EVENING PROGRAMS IN BUSINESS

ACCOUNTING

Associate in Applied Science Degree

			Hrs. Per Week		Credit Hrs.
			Class	Lab	
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	101	Fundamentals of English	<u>3</u>	<u>0</u>	<u>3</u>
			9	2	10

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	General College Mathematics	<u>5</u>	<u>0</u>	<u>5</u>
			8	2	9
Third Quarter (Spring)					
BUS	122	Accounting III	3	2	4
ENG	102	Composition	3	0	3
AOT	100	Computer Keyboarding	<u>1</u>	<u>2</u>	<u>2</u>
			7	4	9
Fourth Quarter (Summer)					
CAS	104	Introduction to Business Data Processing	2	2	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			5	2	6
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
MAT	112	Mathematics of Finance	<u>3</u>	<u>2</u>	<u>4</u>
			8	2	9
Sixth Quarter (Winter)					
AOT	200	Microcomputer Operations	1	3	2
BUS	234	Introduction to Management	<u>3</u>	<u>2</u>	<u>4</u>
			4	5	6
Seventh Quarter (Spring)					
BUS	223	Intermediate Accounting I	5	0	5
ECO	105	Introduction to Economics	<u>5</u>	<u>0</u>	<u>5</u>
			10	0	10
Eighth Quarter (Summer)					
BUS	123	Finance	5	0	5
BUS	224	Intermediate Accounting II	<u>3</u>	<u>2</u>	<u>4</u>
			8	2	9
Ninth Quarter (Fall)					
BUS	225	Cost Accounting I	5	0	5
BUS	239	Introduction to Marketing	<u>3</u>	<u>2</u>	<u>4</u>
			8	2	9
Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
BUS	226	Cost Accounting II	3	2	4
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>3</u>
			9	2	10
Eleventh Quarter (Spring)					
BUS	247	Insurance	5	0	5
BUS	269	Auditing	<u>5</u>	<u>0</u>	<u>5</u>
			10	0	10

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
Twelfth Quarter (Summer)				
BUS	229	Taxes I	3	4
ENG	103	Report Writing	3	3
ENG	206	Written Communication Skills	<u>3</u>	<u>3</u>
			9	10
Thirteenth Quarter (Fall)				
BUS	230	Taxes II	<u>3</u>	<u>4</u>
			3	4
Program Totals			98	119*

*The credit hours total includes the minimum of five (5) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

BUSINESS ADMINISTRATION

Associate in Applied Science Degree

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
First Quarter (Fall)				
BUS	101	Introduction to Business	3	3
BUS	120	Accounting I	3	4
ENG	101	Fundamentals of English	<u>3</u>	<u>3</u>
			9	10
Second Quarter (Winter)				
BUS	121	Accounting II	3	4
MAT	110	General College Mathematics	<u>5</u>	<u>5</u>
			8	9
Third Quarter (Spring)				
ECO	105	Introduction to Economics	5	5
ENG	102	Composition	<u>3</u>	<u>3</u>
			8	8
Fourth Quarter (Summer)				
AOT	100	Computer Keyboarding	1	2
CAS	104	Introduction to Business Data Processing	2	3
PSY	206	Applied Psychology	<u>3</u>	<u>3</u>
			6	8
Fifth Quarter (Fall)				
BUS	114	Business Law	5	5
MAT	112	Mathematics of Finance	<u>3</u>	<u>4</u>
			8	9
Sixth Quarter (Winter)				
BUS	234	Introduction to Management	3	4
BUS	239	Introduction to Marketing	<u>3</u>	<u>4</u>
			6	8

			Hrs. Per Week	Credit	
			Class	Lab	Hrs.
Seventh Quarter (Spring)					
BUS	206	Banking and Finance Credit	3	2	4
BUS	235	Business Organization and Management	<u>3</u>	<u>2</u>	<u>4</u>
			6	4	8
Eighth Quarter (Summer)					
BUS	123	Finance	<u>5</u>	<u>0</u>	<u>5</u>
			5	0	5
Ninth Quarter (Fall)					
BUS	238	Consumer Behavior	<u>5</u>	<u>0</u>	<u>5</u>
			5	0	5
Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
AOT	200	Microcomputer Operations	1	3	2
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>3</u>
			7	3	8
Eleventh Quarter (Spring)					
BUS	247	Insurance	<u>5</u>	<u>0</u>	<u>5</u>
			5	0	5
Twelfth Quarter (Summer)					
BUS	229	Taxes I	3	2	4
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	<u>3</u>	<u>0</u>	<u>3</u>
			9	2	10
Program Totals			82	23	119*

*(1) The credit hours total includes the minimum of five (5) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

(2) Business Administration students must take a minimum of 18 additional credit hours of business and support courses to be selected with the faculty advisor. These major course electives must be selected from the following list:

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
BUS	122	Accounting III	3	2	4
BUS	125	Introduction to Banking Fundamentals	4	0	4
BUS	164	Real Estate Law	3	0	3
BUS	200	Purchasing	4	0	4
BUS	208	Financial Statements Analysis	5	0	5
BUS	222	Control Accounting	3	2	4
BUS	225	Cost Accounting I	5	0	5
BUS	236	Small Business Management	3	0	3
BUS	237	Advertising	5	0	5

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
BUS	241	Retailing	3	0	3
BUS	243	International Marketing	3	0	3
BUS	249	Inventory Control	3	0	3
BUS	266	Professional Sales Techniques	3	2	4
BUS	296	Real Estate Fundamentals for Salespersons	6	0	6
ECO	107	Consumer Economics	3	0	3

BUSINESS COMPUTER PROGRAMMING

Associate in Applied Science Degree

(Offered Even Years)

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
CSC	115	Program Design and Development	3	2	4
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>0</u>	<u>5</u>
			8	2	9
Second Quarter (Winter)					
CAS	110	Computers and Information Processing	2	2	3
ENG	101	Fundamentals of English	3	0	3
MAT	102	Algebra and Trigonometry II	<u>5</u>	<u>0</u>	<u>5</u>
			10	2	11
Third Quarter (Spring)					
CSC	107	Operating Systems	3	2	4
BUS	120	Accounting I	<u>3</u>	<u>2</u>	<u>4</u>
			6	4	8
Fourth Quarter (Summer)					
CAS	200	Microcomputer Spreadsheet Applications	2	2	3
BUS	101	Introduction to Business	3	0	3
BUS	121	Accounting II	<u>3</u>	<u>2</u>	<u>4</u>
			8	4	10
Fifth Quarter (Fall)					
CSC	215	COBOL Programming I	2	2	3
ECO	102	Economics	3	0	3
ENG	102	Composition	<u>3</u>	<u>0</u>	<u>3</u>
			8	2	9
Sixth Quarter (Winter)					
CAS	202	Microcomputer Configuration and Management	2	2	3
CSC	216	COBOL Programming II	2	2	3
MAT	160	Elementary Statistics	<u>5</u>	<u>0</u>	<u>5</u>
			9	4	11
Seventh Quarter (Spring)					
CAS	118	Database Management Concepts	3	2	4
CAS	203	Data Communications and Networking	2	2	3
CSC	218	RPG Programming I	<u>2</u>	<u>2</u>	<u>3</u>
			7	6	10

			Hrs. Per Week Class	Lab	Credit Hrs.
Eighth Quarter (Summer)					
CAS	204	Network Operations	2	2	3
CSC	219	RPG Programming II	2	2	3
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>3</u>
			7	4	9
Ninth Quarter (Fall)					
CAS	220	Systems Analysis and Design	2	3	3
CSC	222	C Programming	<u>2</u>	<u>2</u>	<u>3</u>
			4	5	6
Tenth Quarter (Winter)					
CSC	223	Advanced C Programming	2	2	3
BUS	222	Control Accounting	<u>3</u>	<u>2</u>	<u>4</u>
			5	4	7
Eleventh Quarter (Spring)					
CAS	221	Advanced Projects	2	3	3
CAS	225	Workplace Issues for the Computer Professional	3	0	3
ENG	103	Report Writing	<u>3</u>	<u>0</u>	<u>3</u>
			8	3	9
Twelfth Quarter (Summer)					
BUS	234	Introduction to Management	3	2	4
MAT	112	Mathematics of Finance	<u>3</u>	<u>2</u>	<u>4</u>
			6	4	8
		Program Totals	86	44	113*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

GENERAL OFFICE TECHNOLOGY

Diploma*

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
AOT	101	Keyboarding for Office Occupations	2	3	3
AOT	120	Personal and Professional Development	3	0	3
ENG	111	Grammar	<u>5</u>	<u>0</u>	<u>5</u>
			10	3	11
Second Quarter (Winter)					
AOT	103	Document Formatting	2	3	3
MAT	110	General College Mathematics	<u>5</u>	<u>0</u>	<u>5</u>
			7	3	8
Third Quarter (Spring)					
AOT	105	Document Production	2	3	3
ENG	102	Composition	3	0	3
OTC	100	Spelling and Punctuation Study	<u>3</u>	<u>0</u>	<u>3</u>
			8	3	9

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Fourth Quarter (Summer)					
AOT	117	Word Processing	2	3	3
AOT	201	Records Management	3	0	3
ENG	206	Written Communication Skills	<u>3</u>	<u>0</u>	<u>3</u>
			8	3	9
Fifth Quarter (Fall)					
AOT	217	Advanced Word Processing	2	3	3
BUS	117	Clerical Accounting I	<u>5</u>	<u>2</u>	<u>6</u>
			7	5	9
Sixth Quarter (Winter)					
BUS	118	Clerical Accounting II	5	2	6
OTC	110	Practical Office English	<u>5</u>	<u>0</u>	<u>5</u>
			10	2	11
Seventh Quarter (Spring)					
AOT	216	Payroll Procedures	3	2	4
AOT	218	Desktop Publishing	<u>2</u>	<u>2</u>	<u>3</u>
			5	4	7
Eighth Quarter (Summer)					
AOT	200	Microcomputer Operations	1	3	2
AOT	208	Administrative Support Systems and Procedures I	<u>3</u>	<u>2</u>	<u>4</u>
			4	5	6
Program Totals			59	28	70

* The General Office Technology Degree program is a continuation of the diploma program and is available during the day schedule.

MARKETING AND RETAILING

Associate in Applied Science Degree

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	0	3
BUS	120	Accounting I	3	2	4
ENG	101	Fundamentals of English	<u>3</u>	<u>0</u>	<u>3</u>
			9	2	10
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	General College Mathematics	<u>5</u>	<u>0</u>	<u>5</u>
			8	2	9
Third Quarter (Spring)					
ECO	105	Introduction to Economics	5	0	5
AOT	100	Computer Keyboarding	1	2	2
ENG	102	Composition	<u>3</u>	<u>0</u>	<u>3</u>
			9	2	10
Fourth Quarter (Summer)					
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	206	Written Communication Skills	3	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			8	2	9

			Hrs. Per Week	Credit
			Class	Lab Hrs.
Fifth Quarter (Fall)				
BUS	114	Business Law	5	0
MAT	112	Mathematics of Finance	<u>3</u>	<u>2</u>
			8	9
Sixth Quarter (Winter)				
BUS	234	Introduction to Management	3	2
BUS	239	Introduction to Marketing	<u>3</u>	<u>2</u>
			6	4
Seventh Quarter (Spring)				
BUS	237	Advertising	5	0
BUS	243	International Marketing	<u>3</u>	<u>0</u>
			8	8
Eighth Quarter (Summer)				
BUS	123	Finance	5	0
BUS	206	Banking and Finance Credit	<u>3</u>	<u>2</u>
			8	9
Ninth Quarter (Fall)				
BUS	238	Consumer Behavior	5	0
BUS	248	Marketing Research	<u>3</u>	<u>2</u>
			8	9
Tenth Quarter (Winter)				
BUS	233	Personnel Management and Supervision	3	0
BUS	241	Retailing	3	0
AOT	200	Microcomputer Operations	1	3
ENG	204	Oral Communications	<u>3</u>	<u>0</u>
			10	3
Eleventh Quarter (Spring)				
BUS	247	Insurance	5	0
BUS	266	Professional Sales Techniques	<u>3</u>	<u>2</u>
			8	9
Twelfth Quarter (Summer)				
BUS	229	Taxes I	3	2
ENG	103	Report Writing	<u>3</u>	<u>0</u>
			6	2
Program Totals			96	25
				116*

*The credit hours total includes the minimum of five (5) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

OPERATIONS MANAGEMENT TECHNOLOGY

Associate in Applied Science Degree

			Hrs. Per Week	Credit
			Class	Lab Hrs.
First Quarter (Fall)				
BUS	120	Accounting I	3	2
ENG	101	Fundamentals of English	<u>3</u>	<u>0</u>
			6	2
				7

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Second Quarter (Winter)					
BUS	121	Accounting II	3	2	4
MAT	110	General College Mathematics	<u>5</u>	<u>0</u>	<u>5</u>
			8	2	9
Third Quarter (Spring)					
ECO	105	Introduction to Economics	5	0	5
AOT	100	Computer Keyboarding	<u>1</u>	<u>2</u>	<u>2</u>
			6	2	7
Fourth Quarter (Summer)					
CAS	104	Introduction to Business Data Processing	2	2	3
ENG	102	Composition	3	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			8	2	9
Fifth Quarter (Fall)					
BUS	114	Business Law	5	0	5
ISC	105	Introduction to Production	<u>5</u>	<u>0</u>	<u>5</u>
			10	0	10
Sixth Quarter (Winter)					
BUS	234	Introduction to Management	3	2	4
BUS	239	Introduction to Marketing	<u>3</u>	<u>2</u>	<u>4</u>
			6	4	8
Seventh Quarter (Spring)					
ISC	102	Industrial Safety	3	0	3
BUS	225	Cost Accounting I	5	0	5
BUS	249	Inventory Control	<u>3</u>	<u>0</u>	<u>3</u>
			11	0	11
Eighth Quarter (Summer)					
ISC	209	Plant Layout	1	4	3
MAT	160	Elementary Statistics	<u>5</u>	<u>0</u>	<u>5</u>
			6	4	8
Ninth Quarter (Fall)					
ISC	202	Quality Control	3	2	4
ISC	211	Time Study-Work Measurement	<u>3</u>	<u>2</u>	<u>4</u>
			6	4	8
Tenth Quarter (Winter)					
BUS	233	Personnel Management and Supervision	3	0	3
BUS	200	Purchasing	4	0	4
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>3</u>
			10	0	10
Eleventh Quarter (Spring)					
BUS	235	Business Organization and Management	3	2	4
BUS	247	Insurance	<u>5</u>	<u>0</u>	<u>5</u>
			8	2	9
Twelfth Quarter (Summer)					
ENG	103	Report Writing	3	0	3
ENG	206	Written Communication Skills	<u>3</u>	<u>0</u>	<u>3</u>
			6	0	6
Program Totals			91	22	111*

*The credit hours total includes the minimum of six (6) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

REAL ESTATE (TECHNICAL SPECIALTY)

The Real Estate (Technical Specialty) curriculum is designed to prepare the individual for a particular technical skill in the real estate industry. Provisions may also be made for training required to apply for the North Carolina Real Estate Licensing Examination.

The main objective of the curriculum is to provide a program of continuing education for the individual currently in the real estate field or related fields. Study and related subject areas are emphasized.

Employment opportunities are available in the real estate industry or related industries as salesperson or broker.

Job Opportunities

- Real Estate Salesperson
- Real Estate Broker

**REAL ESTATE (TECHNICAL SPECIALTY)
Certificate**

(Offered Evenings Only)

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
BUS	296	Real Estate Fundamentals for Salespersons	6	0	6
MAT	111	Real Estate Mathematics	<u>3</u>	<u>0</u>	<u>3</u>
			9	0	9
Second Quarter (Winter)					
BUS	164	Real Estate Law	3	0	3
BUS	165	Real Estate Brokerage Operations	<u>3</u>	<u>0</u>	<u>3</u>
			6	0	6
Third Quarter (Spring)					
BUS	209	Real Estate Finance	<u>3</u>	<u>0</u>	<u>3</u>
			3	0	3
Program Totals			18	0	18

REAL ESTATE APPRAISAL

The purpose of the Real Estate Appraisal curriculum is to provide the prelicensing and the pre-certification appraisal education requirements approved by the North Carolina Appraisal Board.

The courses required by the North Carolina Appraisal Board for prelicensing as a *State-licensed* appraiser are covered in this curriculum. These courses are Introduction of Real Estate Appraisal, Valuation Principles and Procedures, and Applied Residential Property Valuation.

The courses required by the North Carolina Appraisal Board for pre-certification as a *State-certified* appraiser are also provided. These courses are Introduction to Income Property Appraisal, Advanced Income Capitalization Procedures, and Applied Income Property Valuation. A good math background is very important in this curriculum. It is recommended that a student have mastered competencies found in a basic algebra course before taking Advanced Income Capitalization Procedures.

The courses required for the *State-licensed* appraiser and the *State-certified* appraiser must be completed in sequential order.

In addition to meeting the education requirements to become a *State-licensed* appraiser and/or a *State-certified* appraiser, an individual must pass the appraisal examinations given by the North Carolina Appraisal Board and meet the appraisal experience requirements. A *State-licensed* or *State-certified* appraiser will be able to identify himself or herself to the public as being state licensed and/or state certified, and will be qualified to perform appraisals in federally-related transactions.

Job Opportunities

State-licensed Appraiser

State-certified Appraiser

REAL ESTATE APPRAISAL

Certificate

(Offered Evenings Only)

			Hrs. Per Week			Credit
			Class	Lab		Hrs.
First Quarter (Fall)						
BUS	170	Introduction to Real Estate Appraisal	$\frac{3}{3}$	$\frac{0}{0}$		$\frac{3}{3}$
Second Quarter (Winter)						
BUS	171	Valuation Principles and Procedures	$\frac{3}{3}$	$\frac{0}{0}$		$\frac{3}{3}$

			Hrs. Per Week Credit		
			Class	Lab	Hrs.
Third Quarter (Spring)					
BUS	172	Applied Residential Property Valuation	$\frac{3}{3}$	$\frac{0}{0}$	$\frac{3}{3}$
Fourth Quarter (Fall)					
BUS	270	Introduction to Income Property Appraisal	$\frac{3}{3}$	$\frac{0}{0}$	$\frac{3}{3}$
Fifth Quarter (Winter)					
BUS	271	Advanced Income Capitalization Procedures	$\frac{3}{3}$	$\frac{0}{0}$	$\frac{3}{3}$
Six Quarter (Spring)					
BUS	272	Applied Property Valuation	$\frac{3}{3}$	$\frac{0}{0}$	$\frac{3}{3}$
Program Totals			18	0	18

EVENING PROGRAMS IN ENGINEERING AND APPLIED TECHNOLOGY

AIR CONDITIONING, HEATING, AND REFRIGERATION Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
AHR	1124A	Principles of Heating Fuels and Burners	2	0	3	3
BPR	1116	Blueprint Reading: Air Conditioning	2	2	0	3
ELC	1117	Basic Electricity	$\frac{3}{7}$	$\frac{2}{4}$	$\frac{0}{3}$	$\frac{4}{10}$
Second Quarter (Winter)						
AHR	1123A	Principles of Air Conditioning	3	0	3	4
AHR	1124B	Principles of Heating: Fuels and Burners	0	0	3	1
ELC	1118	Applied Electricity	$\frac{3}{6}$	$\frac{2}{2}$	$\frac{0}{6}$	$\frac{4}{9}$
Third Quarter (Spring)						
AHR	1123B	Principles of Air Conditioning	0	0	6	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
WLD	1101	Basic Welding	$\frac{1}{6}$	$\frac{2}{2}$	$\frac{0}{6}$	$\frac{2}{9}$

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Fourth Quarter (Summer)						
AHR	1121A	Fundamentals of Refrigeration: Domestic	2	0	6	4
PHY	1101	Applied Science I	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			5	2	6	8
Fifth Quarter (Fall)						
AHR	1121B	Fundamentals of Refrigeration: Domestic	1	0	6	3
ELN	105	Industrial Electronics	1	0	3	2
ENG	1102	Communication Skills	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			5	0	9	8
Sixth Quarter (Winter)						
AHR	1122A	Fundamentals of Refrigeration: Commercial	2	0	6	4
MEC	228	HVAC Motor Controls	1	4	0	3
PSY	1101	Human Relations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			6	4	6	10
Seventh Quarter (Spring)						
AHR	1122B	Fundamentals of Refrigeration: Commercial	1	0	6	3
AHR	1127	Duct Construction and Maintenance	<u>2</u>	<u>0</u>	<u>6</u>	<u>4</u>
			3	0	12	7
Eighth Quarter (Summer)						
AHR	1126	All Year Comfort Systems and A.C. Servicing	2	0	9	5
BUS	1103	Small Business Operations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			5	0	9	8
Program Totals			43	14	57	69

AUTOMOTIVE MECHANICS

The Automotive Mechanics curriculum provides a training program for developing the basic knowledge and skills needed to inspect, diagnose, repair and adjust automotive vehicles. Manual skills are developed in practical shop work and the technical understanding of the operating principles involved in the modern automobile are taught through class assignments, discussions, and shop practices.

Automobile mechanics maintain and repair mechanical, electrical, and body parts of passenger cars, trucks, and buses. In some communities and rural areas, they also may service tractors or marine engines and other gasoline-powered equipment. Mechanics inspect and test to determine the causes of faulty operation. They repair or replace defective parts to restore the vehicle or machine to proper operating condition and use shop manuals and other technical publications as references for technical data. Persons completing this curriculum may find employment with franchised automobile dealers, independent garages, or may start their own business.

Job Opportunities

Entry Level

General Mechanic
Tune-up Mechanic
Front-end Specialist
Automatic Transmission
Specialist
Brake Specialist

Advanced Level

Shop Supervisor
Shop Foreman

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
AUT	1101A	Internal Combustion Engine	3	0	3	4
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
MAT	1101A	Fundamentals of Mathematics	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>
			8	2	3	10
Second Quarter (Winter)						
AUT	1101B	Internal Combustion Engine	3	0	3	4
MAT	1101B	Fundamentals of Mathematics	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>
			4	0	3	5
Third Quarter (Spring)						
AUT	1102	Engine Electrical and Fuel Systems	6	0	6	8
AUT	1123A	Automotive Chassis and Suspension Systems	<u>1</u>	<u>0</u>	<u>3</u>	<u>2</u>
			7	0	9	10
Fourth Quarter (Summer)						
AUT	1123B	Automotive Chassis Suspension Systems	2	0	3	3
PHY	1101	Applied Science I	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			5	2	3	7
Fifth Quarter (Fall)						
AUT	1121	Braking Systems	2	0	3	3
ENG	1102	Communications Skills	3	0	0	3
PSY	1101	Human Relations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			8	0	3	9
Sixth Quarter (Winter)						
AUT	1124	Automotive Power Train Systems	<u>4</u>	<u>0</u>	<u>6</u>	<u>6</u>
			4	0	6	6
Seventh Quarter (Spring)						
AUT	1122	Automotive Electronics and Control Systems	4	2	0	5
AUT	1128	Automotive Air Conditioning	2	2	0	3
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics)	<u>(3)</u>	<u>(0)</u>	<u>(0)</u>	<u>(3)</u>
			9	4	0	11
Eighth Quarter (Summer)						
AUT	1125	Automotive Servicing	<u>6</u>	<u>0</u>	<u>6</u>	<u>8</u>
			6	0	6	8
Program Totals			51	8	33	66

CIVIL ENGINEERING TECHNOLOGY**Associate in Applied Science Degree****(Offered odd years)**

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	110	Engineering Graphics	2	4	4
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>0</u>	<u>5</u>
			7	4	9
Second Quarter (Winter)					
CIV	101	Calculator Operation for Engineering Problems	1	2	2
CIV	217	Introduction to Construction Technology	2	6	4
MAT	102	Algebra and Trigonometry II	<u>5</u>	<u>0</u>	<u>5</u>
			8	8	11
Third Quarter (Spring)					
CIV	202	Properties of Soils	2	2	3
CAS	101	Introduction to Computing Concepts	2	2	3
MAT	103	Analytical Geometry and Calculus	<u>5</u>	<u>0</u>	<u>5</u>
			9	4	11
Fourth Quarter (Summer)					
SUR	101	Surveying I	2	6	4
CHM	102	Engineering Chemistry	2	2	3
ENG	101	Fundamentals of English	<u>3</u>	<u>0</u>	<u>3</u>
			7	8	10
Fifth Quarter (Fall)					
SUR	102	Surveying II	2	6	4
PHY	111	Physics I -Mechanics	<u>3</u>	<u>2</u>	<u>4</u>
			5	8	8
Sixth Quarter (Winter)					
DFT	104	Civil Drafting	2	4	4
PHY	112	Physics II-Rotation and Matter	<u>3</u>	<u>2</u>	<u>4</u>
			5	6	8
Seventh Quarter (Spring)					
CIV	114	Statics	2	4	4
DFT	220	Computer Aided Drafting	<u>1</u>	<u>6</u>	<u>3</u>
			3	10	7
Eighth Quarter (Summer)					
CIV	216	Strength of Materials	2	4	4
CIV	221	Asphalt	2	2	3
SUR	210	Construction Surveying	<u>1</u>	<u>3</u>	<u>2</u>
			5	9	9
Ninth Quarter (Fall)					
CIV	218	Properties of Plain Portland Concrete	2	2	3
CIV	223	Codes, Contracts, and Specifications	2	2	3
CIV	225	Construction Estimating	<u>2</u>	<u>4</u>	<u>4</u>
			6	8	10

			Hrs. Per Week	Credit
			Class	Lab Hrs.
Tenth Quarter (Winter)				
CIV	219	Steel and Timber Construction	2	4
CIV	228	Relations and Ethics	1	2
CIV	231	Hydrology	<u>2</u>	<u>3</u>
			5	9
Eleventh Quarter (Spring)				
CIV	220	Project Planning	2	3
CIV	224	Reinforced Portland Concrete	2	3
CIV	230	Hydraulics	2	3
ENG	102	Composition	<u>3</u>	<u>3</u>
			9	12
Twelfth Quarter (Summer)				
CIV	232	Water and Waste Treatment	2	3
ENG	204	Oral Communications	3	3
SOC	201	Social Problems	<u>3</u>	<u>3</u>
			8	9
Thirteenth Quarter (Fall)				
ENG	103	Report Writing	3	3
PSY	206	Applied Psychology	<u>3</u>	<u>3</u>
			6	6
Program Totals			83	125*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

DRAFTING AND DESIGN ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

(Offered Odd Years)

			Hrs. Per Week	Credit
			Class	Lab Hrs.
First Quarter (Fall)				
DFT	101	Drafting	2	4
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>5</u>
			7	9
Second Quarter (Winter)				
DFT	102	Drafting	2	4
MAT	102	Algebra and Trigonometry II	<u>5</u>	<u>5</u>
			7	9
Third Quarter (Spring)				
DFT	204	Descriptive Geometry	1	3
*MAT	204	Applied Mathematics	<u>5</u>	<u>5</u>
			6	8
Fourth Quarter (Summer)				
MEC	111	Manufacturing Processes	3	4
PHY	111	Physics I - Mechanics	<u>3</u>	<u>4</u>
			6	8

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
Fifth Quarter (Fall)				
DFT	103	Drafting	2	4
PHY	112	Physics II - Rotation and Matter	<u>3</u>	<u>4</u>
			5	8
Sixth Quarter (Winter)				
DFT	201	Design Drafting I	2	4
ENG	101	Fundamentals of English	3	3
SOC	201	Social Problems	<u>3</u>	<u>3</u>
			8	10
Seventh Quarter (Spring)				
DFT	205	Design Drafting II	2	4
DFT	220	Computer-Aided Drafting	<u>1</u>	<u>3</u>
			3	7
Eighth Quarter (Summer)				
DFT	211	Mechanisms and Kinematic Design	2	4
MEC	101	Machine Processes	<u>2</u>	<u>4</u>
			4	8
Ninth Quarter (Fall)				
DFT	222	Computer Aided Manufacturing	2	4
ENG	102	Composition	3	3
PSY	206	Applied Psychology	<u>3</u>	<u>3</u>
			8	10
Tenth Quarter (Winter)				
DFT	206	Design Drafting III	2	4
PHY	113	Physics III - Electricity and Magnetism	<u>3</u>	<u>4</u>
			5	8
Eleventh Quarter (Spring)				
DFT	221	Advanced Computer-Aided Drafting and Design	1	3
MEC	230	Industrial Motor Controls	<u>4</u>	<u>5</u>
			5	8
Twelfth Quarter (Summer)				
MEC	105	Statics	3	4
MEC	211	Engineering Materials	<u>3</u>	<u>4</u>
			6	8
Thirteenth Quarter (Fall)				
MEC	205	Strength of Materials	3	4
MEC	235	Hydraulics and Pneumatics	<u>3</u>	<u>4</u>
			6	8
Fourteenth Quarter (Winter)				
CAS	101	Introduction to Computing Concepts	2	3
ENG	103	Report Writing	3	3
ENG	204	Oral Communications	3	3
PHI	101	Ethics and Human Values	<u>3</u>	<u>3</u>
			11	12
Program Totals			87	124 *

*MAT 103 may be substituted for MAT 204.

*The credit hours total includes the minimum of three (3) credit hours of non-major electives which must be taken before graduation in addition to the stated required courses.

ELECTRONICS ENGINEERING TECHNOLOGY

Associate in Applied Science Degree

This program, at night, is designed with two quarters of mathematics scheduled before entrance into major area electronic courses. With this plan, we hope to prepare the student for greater success in the study of Electronics Technology.

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	110	Engineering Graphics	2	4	4
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>0</u>	<u>5</u>
			7	4	9
Second Quarter (Winter)					
ELN	110	Technical Documentation	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	102	Algebra and Trigonometry II	<u>5</u>	<u>0</u>	<u>5</u>
			9	2	10
Third Quarter (Spring)					
ELC	101	Fundamentals of D.C.	4	4	6
MAT	103	Analytical Geometry and Calculus	5	0	5
(MAT	151	Calculus and Analytic Geometry)	<u>(5)</u>	<u>(0)</u>	<u>(5)</u>
			9	4	11
Fourth Quarter (Summer)					
ELC	102	Fundamentals of A.C.	4	4	6
PHY	111	Physics I - Mechanics	<u>3</u>	<u>2</u>	<u>4</u>
			7	6	10
Fifth Quarter (Fall)					
ELN	104	Semiconductor Devices	4	4	6
PHY	112	Physics II-Rotation and Matter	<u>3</u>	<u>2</u>	<u>4</u>
			7	6	10
Sixth Quarter (Winter)					
ELN	201	Linear Integrated Circuits	4	4	6
MEC	230	Industrial Motor Controls	<u>4</u>	<u>2</u>	<u>5</u>
			8	6	11
Seventh Quarter (Spring)					
ELN	111	Fabrication Techniques	1	4	3
ELN	202	Communications Systems	4	4	6
ENG	102	Composition	<u>3</u>	<u>0</u>	<u>3</u>
			8	8	12

			Hrs. Per Week	Credit
			Class	Hrs.
			Lab	
Eighth Quarter (Summer)				
ELN	203	Digital Fundamentals	4	6
ENG	204	Oral Communications	<u>3</u>	<u>3</u>
			7	9
Ninth Quarter (Fall)				
ELN	204	Digital Applications	4	6
PHY	114	Physics IV - Light, Sound and Wave Phenomena	<u>3</u>	<u>4</u>
			7	10
Tenth Quarter (Winter)				
ELN	210	Analytic Troubleshooting	1	2
ELN	223	Microprocessor Principles	4	6
PSY	206	Applied Psychology	<u>3</u>	<u>3</u>
			8	11
Eleventh Quarter (Spring)				
ELN	224	Microprocessor Interfacing	4	6
DFT	220	Computer Aided Drafting	<u>1</u>	<u>3</u>
			5	9
Twelfth Quarter (Summer)				
ELN	225	Industrial Controls	4	6
ENG	103	Report Writing	<u>3</u>	<u>3</u>
			7	9
Program Totals			89	127*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

ELECTRONICS SERVICING

The curriculum in Electronic Servicing is designed to provide basic knowledge and skills required in the installation, maintenance and servicing of electronic components and systems. Laboratory time will be spent verifying electronic theory and principles, learning installation, maintenance, and service techniques.

An electronic service technician will be able to install, maintain, and service electronic equipment including radios, television, audio/video recording and playback equipment, home entertainment systems, digital electronic systems, Master Antenna Television and Cable Television components and systems.

Job Opportunities

Electronic Service Technician
Audio/Video Service Technician
Radio Service Technician
Television Service Technician

ELECTRONICS SERVICING**Diploma**

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
ELN	1120	Direct and Alternating Current	2	6	0	5
MAT	1101	Fundamentals of Mathematics	<u>5</u>	<u>0</u>	<u>0</u>	<u>5</u>
			7	6	0	10
Second Quarter (Winter)						
ELN	1121	Direct and Alternating Current	2	10	0	7
PSY	1101	Human Relations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			5	10	0	10
Third Quarter (Spring)						
ELN	1122	Solid State Devices	4	4	0	6
ELN	210	Analytical Troubleshooting	<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>
			6	6	0	9
Fourth Quarter (Summer)						
ELN	1123	Digital Circuits	4	4	0	6
PHY	1101	Applied Science	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			7	6	0	10
Fifth Quarter (Fall)						
ELN	111	Fabrication	1	6	0	4
ENG	1102	Communication Skills	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			4	6	0	7
Sixth Quarter (Winter)						
ELN	1124	Audio Servicing	<u>5</u>	<u>10</u>	<u>0</u>	<u>10</u>
			5	10	0	10
Seventh Quarter (Spring)						
ELN	1125	Video Servicing	<u>5</u>	<u>10</u>	<u>0</u>	<u>10</u>
			5	10	0	10
			39	54	0	66

INDUSTRIAL ELECTRICAL/ELECTRONICS TECHNICIAN

This curriculum is designed to train technicians for jobs in industry requiring knowledge of electrical and electronic installation, repair, maintenance, and service. Courses are designed to develop technicians competent in the practical applications of electrical/electronic theory and procedures for industrial machines and controls. Students learn code requirements, to read blueprints and schematics, to determine repair procedures, and to make necessary repairs and/or adjustments.

The graduate of this curriculum is prepared to maintain and service industrial electrical/electronic equipment found in most industrial plants.

Job Opportunities**Entry Level**

Electrical/Electronics Maintenance Mechanic

Electromechanical Assembler

Electronics Utility Worker

Electronics Mechanic

INDUSTRIAL ELECTRICAL/ELECTRONICS TECHNOLOGY

Associate in Applied Science Degree

	Credit Hrs.
This Program Consists of:	
Major Courses (ELC, ELN Prefixed Courses)	77
Related and General Education Courses	45
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	14
Social Science	3
Other	13
Electives	<u>3</u>
TOTAL	125

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
BPR	101	Architectural and Construction Blueprint Reading	3	0	0	3
MAT	101	Algebra and Trigonometry I	<u>5</u> 8	<u>0</u> 0	<u>0</u> 0	<u>5</u> 8
Second Quarter (Winter)						
ELC	105	Electrical Formulas and Computations	3	0	0	3
ENG	101	Fundamentals of English	3	0	0	3
MAT	102	Algebra and Trigonometry II	<u>5</u> 11	<u>0</u> 0	<u>0</u> 0	<u>5</u> 11
Third Quarter (Spring)						
ELC	101	Fundamentals of DC	4	4	0	6
ENG	102	Composition I	<u>3</u> 7	<u>0</u> 4	<u>0</u> 0	<u>3</u> 9
Fourth Quarter (Summer)						
ELC	102	Fundamentals of AC	4	4	0	6
PHY	111	Physics - Mechanics	<u>3</u> 7	<u>2</u> 6	<u>0</u> 0	<u>4</u> 10
Fifth Quarter (Fall)						
ELC	103	Basic Wiring Practices I	2	0	6	4
ELC	108	Electrical Blueprints and Schematics	<u>3</u> 5	<u>0</u> 0	<u>0</u> 6	<u>3</u> 7
Sixth Quarter (Winter)						
ELC	104	Basic Wiring Practices	3	0	9	6
ELC	106	Electrical Code	<u>4</u> 7	<u>0</u> 0	<u>0</u> 9	<u>4</u> 10
Seventh Quarter (Spring)						
ELC	109	Computer Application for Electronics	3	2	0	4
ELC	110	Commercial/Industrial Wiring	<u>5</u> 8	<u>0</u> 2	<u>12</u> 12	<u>9</u> 13
Eighth Quarter (Summer)						
ELN	106	Industrial Electronics	3	2	0	4
ELN	203	Digital Fundamentals	<u>4</u> 7	<u>4</u> 6	<u>0</u> 0	<u>6</u> 10

			Hrs. Per Week		Credit	
			Class	Lab	Hrs.	
Ninth Quarter (Fall)						
ENG	204	Oral Communications	3	0	0	3
ISA	102	Industrial Safety	3	0	0	3
MEC	230	Industrial Motor Controls	<u>4</u>	<u>2</u>	<u>0</u>	<u>5</u>
			10	2	0	11
Tenth Quarter (Winter)						
ELC	202	Electrical Maintenance	3	0	6	5
MEC	213	Machining Design	2	2	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			8	2	6	11
Eleventh Quarter (Spring)						
ELC	111	Introduction to PLC's	3	2	0	4
ENG	103	Report Writing	3	0	0	3
MEC	235	Hydraulics and Pneumatics	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			9	4	0	11
Twelfth Quarter (Summer)						
ELC	201	PLC Applications	2	0	12	6
ELC	210	Work Experience	<u>0</u>	<u>0</u>	<u>20</u>	<u>2</u>
			2	0	32	8
Program Totals			89	26	65	125*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

MACHINIST Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
MES	1101A	Machine Shop I	2	0	6	4
BPR	1104	Blueprint Reading: Mechanical	1	2	0	2
MAT	1101A	Fundamentals of Mathematics	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>
			7	2	6	10
Second Quarter (Winter)						
MES	1101B	Machine Shop I	1	0	6	3
BPR	1105	Blueprint Reading: Mechanical	1	2	0	2
MAT	1101B	Fundamentals of Mathematics	1	0	0	1
MAT	1103	Geometry	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			6	2	6	9
Third Quarter (Spring)						
MES	1102A	Machine Shop II	1	0	6	3
BPR	1106	Blueprint Reading: Mechanical	1	2	0	2
MAT	1104	Trigonometry	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			5	2	6	8

			Hrs. Per Week		Credit	
			Class	Lab	Hrs.	
Fourth Quarter (Summer)						
MES	1102B	Machine Shop II	2	0	6	4
MAT	1123	Machinist Mathematics	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			5	0	6	7
Fifth Quarter (Fall)						
MES	1103A	Machine Shop III	2	0	6	4
ENG	1102	Communication Skills	3	0	0	3
PSY	1101	Human Relations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			8	0	6	10
Sixth Quarter (Winter)						
MES	1103B	Machine Shop III	1	0	6	3
MES	1170	Introduction to CNC Machining	1	2	0	2
PHY	1100	Industrial Science	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
			5	4	6	9
Seventh Quarter (Spring)						
MES	1104	Machine Shop IV	2	0	6	4
CAS	101	Introduction to Computing Concepts	2	2	0	3
WLD	1101	Basic Welding	<u>1</u>	<u>2</u>	<u>0</u>	<u>2</u>
			5	4	6	9
Eighth Quarter (Summer)						
MES	1136	Computer-Aided Machining	2	6	0	5
MES	1171	Operation of CNC Machines	2	2	0	3
MEC	1115	Ferrous/Non-Ferrous Metals	<u>1</u>	<u>0</u>	<u>3</u>	<u>2</u>
			5	8	3	10
Program Totals			47	24	45	72

Machinist, Advanced Diploma

Students who continue through the advanced diploma level of the machinist curriculum will be able to refine basic machining skills and gain more experience in CNC machining and other technologies.

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Ninth Quarter (Fall)						
MEC	270	CNC Lathe Operations	1	0	3	2
MEC	271	CNC Milling Operations	1	0	3	2
DFT	150	Computer-Aided Drafting	<u>1</u>	<u>6</u>	<u>0</u>	<u>3</u>
			3	6	6	7
Tenth Quarter (Winter)						
MEC	172	Programming CNC Milling Machines	2	2	0	3
MEC	173	Advanced Programming for CNC Milling Machines	2	2	0	3
MEC	182	Programming CNC Lathes	2	2	0	3
MEC	183	Advanced Programming for CNC Lathes	<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>
			8	8	0	12
Eleventh Quarter (Spring)						
MEC	137	Computer-Aided Machining II	2	6	0	5
TDM	1205	Fundamentals of Mold Construction	3	2	0	4
PSY	1105	Industrial Team Building	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
			7	8	0	11

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Twelfth Quarter (Summer)						
MEC	210	Production Procedures	3	0	3	4
TDT	101	Geometric Tolerances and Inspection Procedures	<u>1</u> 4	<u>2</u> 2	<u>0</u> 3	<u>2</u> 6
Program Totals			68	46	54	108

MECHANICAL ENGINEERING TECHNOLOGY
Associate in Applied Science Degree
(Offered Even Years)

			Hrs. Per Week	Credit	
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	110	Engineering Graphics	2	4	4
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>0</u>	<u>5</u>
			7	4	9
Second Quarter (Winter)					
MEC	211	Engineering Materials	3	2	4
MAT	102	Algebra and Trigonometry II	<u>5</u>	<u>0</u>	<u>5</u>
			8	2	9
Third Quarter (Spring)					
CAS	101	Introduction to Computing Concepts	2	2	3
ENG	101	Fundamentals of English	3	0	3
MAT	103	Analytical Geometry and Calculus	<u>5</u>	<u>0</u>	<u>5</u>
			10	2	11
Fourth Quarter (Summer)					
MEC	111	Manufacturing Processes I	3	2	4
PHY	111	Physics I - Mechanics	<u>3</u>	<u>2</u>	<u>4</u>
			6	4	8
Fifth Quarter (Fall)					
PHY	112	Physics II - Rotation and Matter	3	2	4
PSY	206	Applied Psychology	3	0	3
TDT	105	Manufacturing Cost Analysis	<u>1</u>	<u>2</u>	<u>2</u>
			7	4	9
Sixth Quarter (Winter)					
DFT	220	Computer Aided Drafting	1	6	3
ENG	102	Composition	3	0	3
TDT	101	Geometric Tolerances and			
		Inspection Procedures	<u>1</u>	<u>2</u>	<u>2</u>
			5	8	8
Seventh Quarter (Spring)					
MEC	235	Hydraulics and Pneumatics	3	2	4
ELC	101	Fundamentals of DC	<u>4</u>	<u>4</u>	<u>6</u>
			7	6	10

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Eighth Quarter (Summer)					
MEC	105	Statics	3	2	4
DFT	221	Advanced Computer Aided Drafting and Design	<u>1</u>	<u>6</u>	<u>3</u>
			4	8	7
Ninth Quarter (Fall)					
MEC	205	Strength of Materials	3	2	4
MEC	230	Industrial Motor Controls	<u>4</u>	<u>2</u>	<u>5</u>
			7	4	9
Tenth Quarter (Winter)					
MEC	112	Manufacturing Processes II	2	4	4
MEC	206	Dynamics	4	0	4
ENG	204	Oral Communications	<u>3</u>	<u>0</u>	<u>3</u>
			9	4	11
Eleventh Quarter (Spring)					
MEC	208	Machine Design	3	4	5
MEC	212	Automation I	<u>4</u>	<u>4</u>	<u>6</u>
			7	8	11
Twelfth Quarter (Summer)					
MEC	214	Automation II	3	6	6
MEC	216	Vibrational Analysis and Preventive Maintenance	<u>2</u>	<u>4</u>	<u>4</u>
			5	10	10
Thirteenth Quarter (Fall)					
MEC	101	Machine Processes	2	4	4
		-or-			
MEC	110	Supervised Work Experience	0	30	3
ENG	107	Technical Composition	<u>3</u>	<u>0</u>	<u>3</u>
			5 (3)	4 (30)	7 (6)
Fourteenth Quarter (Winter)					
ENG	103	Report Writing	<u>3</u>	<u>0</u>	<u>3</u>
			3	0	3
Program Totals			90 (88)	68 (94)	128 (127)*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

RESIDENTIAL CARPENTRY

Diploma

(Sequence for Odd Years)

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
CAR	1101A	Carpentry I	4	0	3	5
BPR	1107	Blueprint Reading-				
		Construction Trades	1	2	0	2
MAT	1101A	Fundamentals of Mathematics	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>
			9	2	3	11

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Second Quarter (Winter)						
CAR	1103A	Carpentry II	3	0	6	5
BPR	1109	Blueprint Reading- Construction Trades	1	2	0	2
MAT	1101B	Fundamentals of Mathematics	1	0	0	1
MAT	1103	Geometry	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			8	2	6	11
Third Quarter (Spring)						
CAR	1103B	Carpentry II	3	0	9	6
DFT	1127	Construction Trades-Drafting I	<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>
			5	2	9	9
Fourth Quarter (Summer)						
CAR	1105A	Advanced Carpentry Projects	1	0	12	5
DFT	1128	Construction Trades-Drafting II	<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>
			3	2	12	8
Fifth Quarter (Fall)						
CAR	1101B	Carpentry I	1	0	3	2
CAR	1102A	Cabinetmaking I	<u>3</u>	<u>0</u>	<u>9</u>	<u>6</u>
			4	0	12	8
Sixth Quarter (Winter)						
CAR	1102B	Cabinetmaking I	2	0	6	4
PSY	1101	Human Relations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			5	0	6	7
Seventh Quarter (Spring)						
CAR	1104	Cabinetmaking II	0	0	9	3
ENG	1102	Communication Skills	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			3	0	9	6
Eighth Quarter (Summer)						
CAR	1105B	Advanced Carpentry Projects	1	0	12	5
BUS	1103	Small Business Operations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			4	0	12	8
Program Totals			41	8	69	68

RESIDENTIAL CARPENTRY Diploma

(Sequence for Even Years)

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
CAR	1102A	Cabinetmaking I	3	0	9	6
BPR	1107	Blueprint Reading- Construction Trades	<u>1</u>	<u>2</u>	<u>0</u>	<u>2</u>
			4	2	9	8
Second Quarter (Winter)						
CAR	1102B	Cabinetmaking I	2	0	6	4
PSY	1101	Human Relations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			5	0	6	7

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Third Quarter (Spring)						
CAR	1104	Cabinetmaking II	0	0	9	3
ENG	1102	Communication Skills	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			3	0	9	6
Fourth Quarter (Summer)						
CAR	1105A	Advanced Carpentry Projects	1	0	12	5
BUS	1103	Small Business Operations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			4	0	12	8
Fifth Quarter (Fall)						
CAR	1101	Carpentry I	5	0	6	7
MAT	1101A	Fundamentals of Mathematics	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>
			9	0	6	11
Sixth Quarter (Winter)						
CAR	1103A	Carpentry II	3	0	6	5
BPR	1109	Blueprint Reading- Construction Trades	1	2	0	2
MAT	1101B	Fundamentals of Mathematics	1	0	0	1
MAT	1103	Geometry	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			8	2	6	11
Seventh Quarter (Spring)						
CAR	1103B	Carpentry II	3	0	9	6
DFT	1127	Construction Trades- Drafting I	<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>
			5	2	9	9
Eighth Quarter (Summer)						
CAR	1105B	Advanced Carpentry Projects	1	0	12	5
DFT	1128	Construction Trades- Drafting II	<u>2</u>	<u>2</u>	<u>0</u>	<u>3</u>
			3	2	12	8
Program Totals			41	8	69	68

SURVEYING TECHNOLOGY
Associate in Applied Science Degree
 (Offered odd years)

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	110	Engineering Graphics	2	4	4
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>0</u>	<u>5</u>
			7	4	9
Second Quarter (Winter)					
CIV	101	Calculator Operation for Engineering Problems	1	2	2
CIV	217	Introduction to Construction Technology	2	6	4
MAT	102	Algebra and Trigonometry II	<u>5</u>	<u>0</u>	<u>5</u>
			8	8	11

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Third Quarter (Spring)					
CIV	202	Properties of Soils	2	2	3
CAS	101	Introduction to Computing Concepts	2	2	3
MAT	103	Analytical Geometry and Calculus	<u>5</u>	<u>0</u>	<u>5</u>
			9	4	11
Fourth Quarter (Summer)					
SUR	101	Surveying I	2	6	4
ENG	101	Fundamentals of English	3	0	3
SOC	201	Social Problems	<u>3</u>	<u>0</u>	<u>3</u>
			8	6	10
Fifth Quarter (Fall)					
SUR	102	Surveying II	2	6	4
PHY	114	Physics IV-Light, Sound and Wave Phenomena	<u>3</u>	<u>2</u>	<u>4</u>
			5	8	8
Sixth Quarter (Winter)					
DFT	104	Civil Drafting	2	4	4
PHY	113	Physics III - Electricity and Magnetism	<u>3</u>	<u>2</u>	<u>4</u>
			5	6	8
Seventh Quarter (Spring)					
SUR	206	Equipment Calibration	0	3	1
SUR	209	Surveying Law	3	0	3
DFT	220	Computer Aided Drafting	<u>1</u>	<u>6</u>	<u>3</u>
			4	9	7
Eighth Quarter (Summer)					
SUR	103	Route Surveying	2	6	4
SUR	210	Construction Surveying	1	3	2
ENG	102	Composition	<u>3</u>	<u>0</u>	<u>3</u>
			6	9	9
Ninth Quarter (Fall)					
SUR	104	Topographic Surveys/Photogrammetry	2	6	4
CIV	223	Codes, Contracts, and Specifications	<u>2</u>	<u>2</u>	<u>3</u>
			4	8	7
Tenth Quarter (Winter)					
CIV	228	Relations and Ethics	1	2	2
CIV	231	Hydrology	2	2	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			6	4	8
Eleventh Quarter (Spring)					
SUR	205	Surveying Research	1	2	2
SUR	207	Field and Office Practice	1	3	2
CIV	220	Project Planning	2	2	3
CIV	230	Hydraulics	<u>2</u>	<u>2</u>	<u>3</u>
			6	9	10
Twelfth Quarter (Summer)					
SUR	204	Advanced Surveying	2	6	4
SUR	214	Subdivision Planning	<u>2</u>	<u>6</u>	<u>4</u>
			4	12	8

			Hrs. Per Week	Credit
			Class	Lab Hrs.
Thirteenth Quarter (Fall)				
SUR	215	Senior Project	0	6 2
ENG	103	Report Writing	3	0 3
ENG	204	Oral Communications	<u>3</u>	<u>0</u> <u>3</u>
			6	6 8
Program Totals			78	93 120*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

TOOL DESIGN TECHNOLOGY

Associate in Applied Science Degree (Offered Even Years)

This Program Consists of:	Credit
Major Courses (TDT Prefixed Courses)	Hrs.
Major Courses (TDT Prefixed Courses)	45
Related and General Education Courses	80
Including:	
Communications	12
Humanities/Fine Arts	3
Natural Sciences/Mathematics	27
Social Science	6
Other	32
Electives	<u>3</u>
TOTAL	128

The Tool Design Technology program provides the student knowledge and skills to design and detail specific types of tools to produce products for the manufacturing industry. The curriculum includes the basic skills for designing a variety of tools including jigs and fixtures, gauges, metal stamping dies, cutting tools, plastic and metal casting molds and special machines. The program offers drafting skills used in most engineering functions, a planned sequence of related courses and shop experiences, instruction in hydraulics, pneumatics, electrical control systems and machining processes. The student also studies cost analysis and the evaluation of economic benefits of alternative designs.

An emphasis on thinking, planning and advanced courses such as computer aided drafting and design should prepare the graduate for the most modern tool design environments. The content of the program will help the graduate to enter the field of Tool Design and advance to future jobs in the manufacturing engineering market.

Job Opportunities

Tool Detailer
Tool Drafter
Tool Design Technician
Tool Engineering Technician
Manufacturing/Production Engineering Technician

Notice: At this time, the Associate in Applied Science degree is not available in this program. However, a Certificate in Tool Design Technology will be awarded upon successful completion of the courses listed below. These courses will be available on an evening schedule as indicated.

<u>Quarter</u>	<u>Courses</u>
Fall	TDT 201, DFT 220
Winter	TDT 101, TDT 202
Spring	TDT 203, DFT 221

The Tool Design Technology certificate program may be of special interest to graduates of the Tool, Die and Mold Making program. General Education and Related courses are available, and students are encouraged to take these in support of the certificate courses.

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>0</u>	<u>5</u>
			7	4	9
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
MAT	102	Algebra and Trigonometry II	<u>5</u>	<u>0</u>	<u>5</u>
			7	4	9
Third Quarter (Spring)					
DFT	204	Descriptive Geometry	1	6	3
MAT	204	Applied Mathematics	<u>5</u>	<u>0</u>	<u>5</u>
			6	6	8
Fourth Quarter (Summer)					
MEC	101	Machine Processes	2	4	4
PHY	111	Physics I - Mechanics	<u>3</u>	<u>2</u>	<u>4</u>
			5	6	8
Fifth Quarter (Fall)					
TDT	105	Manufacturing Cost Analysis	1	2	2
DFT	103	Drafting	2	4	4
PHY	112	Physics II - Rotation and Matter	<u>3</u>	<u>2</u>	<u>4</u>
			6	8	10
Sixth Quarter (Winter)					
MEC	111	Manufacturing Processes I	3	3	4
PHY	113	Physics III - Electricity and Magnetism	<u>3</u>	<u>2</u>	<u>4</u>
			6	5	8
Seventh Quarter (Spring)					
TDT	101	Geometric Tolerances and Inspection Procedures	1	2	2
CAS	101	Introduction to Computing Concepts	<u>2</u>	<u>2</u>	<u>3</u>
			3	4	5
Eighth Quarter (Summer)					
DFT	220	Computer Aided Drafting	1	6	3
MEC	105	Statics	<u>5</u>	<u>0</u>	<u>5</u>
			6	6	8

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Ninth Quarter (Fall)					
MEC	205	Strength of Materials	5	0	5
MEC	235	Hydraulics and Pneumatics	<u>3</u>	<u>3</u>	<u>4</u>
			8	3	9
Tenth Quarter (Winter)					
TDT	201	Tool Design I	2	6	4
ENG	101	Fundamentals of English	3	0	3
MEC	206	Dynamics	<u>4</u>	<u>0</u>	<u>4</u>
			9	6	11
Eleventh Quarter (Spring)					
TDT	202	Tool Design II	2	6	4
ENG	102	Composition	3	0	3
PSY	206	Applied Psychology	<u>3</u>	<u>0</u>	<u>3</u>
			8	6	10
Twelfth Quarter (Summer)					
TDT	203	Tool Design III	2	6	4
ENG	103	Report Writing	3	0	3
MEC	213	Machine Design	<u>2</u>	<u>2</u>	<u>3</u>
			7	8	10
Thirteenth Quarter (Fall)					
TDT	204	CAD/CAM Operations in Automation	2	6	4
ENG	204	Oral Communications	3	0	3
SOC	201	Social Problems	<u>3</u>	<u>0</u>	<u>3</u>
			8	6	10
Fourteenth Quarter (Winter)					
TDT	210	Introduction to CNC and Robotic Applications	3	3	4
DFT	221	Advanced Computer-Aided Drafting and Design	<u>1</u>	<u>6</u>	<u>3</u>
			4	9	7
Program Totals			90	81	128*

*The credit hours total includes the minimum of three (3) credit hours of non-major electives and a three (3) credit-hour Humanities elective, which must be taken before graduation in addition to the stated required courses.

TOOL, DIE AND MOLD MAKING

Technical Diploma

(Offered Even Years)

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
TDM	1201A	Machine Processes	2	0	6	4
MAT	1203	Trigonometry	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			5	0	6	7

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Second Quarter (Winter)						
TDM	1201B	Machine Processes	1	0	6	3
MAT	1204	Compound Angles	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			4	0	6	6
Third Quarter (Spring)						
TDM	1202A	Machine Processes	2	0	6	4
BPR	1208A	Blueprint Reading: Tool & Die	1	0	0	1
DFT	1207	General Machine Drafting	<u>2</u>	<u>4</u>	<u>0</u>	<u>4</u>
			5	4	6	9
Fourth Quarter (Summer)						
TDM	1202B	Machine Processes	1	0	6	3
BPR	1208B	Blueprint Reading: Tool & Die	0	4	0	2
MEC	1203	Metallurgy	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			4	4	6	8
Fifth Quarter (Fall)						
TDM	1204A	Machine Processes	2	0	6	4
TDM	1205	Fundamentals of Mold Construction	3	2	0	4
MEC	1209	Hydraulics and Pneumatics	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			7	2	6	11
Sixth Quarter (Winter)						
TDM	1204B	Machine Processes	1	0	6	3
TDM	1203	Die and Mold Construction	<u>1</u>	<u>0</u>	<u>3</u>	<u>2</u>
			2	0	9	5
Seventh Quarter (Spring)						
TDM	1206A	Machine Processes	2	0	6	4
TDM	1207	Special Problems & Molding	<u>3</u>	<u>4</u>	<u>0</u>	<u>5</u>
			5	4	6	9
Eighth Quarter (Summer)						
TDM	1206B	Machine Processes	1	0	6	3
DFT	1209	Tool Design & Planning	<u>2</u>	<u>4</u>	<u>0</u>	<u>4</u>
			3	4	6	7
Program Totals			36	18	51	62

* Students who have not completed the machinist curriculum must also take ENG 1102 and PSY 1101. Total Program Credit Hours - 68.

WELDING

Diploma

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
WLD	1120	Oxyacetylene Welding & Cutting	<u>3</u>	<u>0</u>	<u>12</u>	<u>7</u>
			3	0	12	7

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
Second Quarter (Winter)						
WLD	1121	Arc Welding	<u>3</u>	<u>0</u>	<u>12</u>	<u>7</u>
			3	0	12	7
Third Quarter (Spring)						
WLD	1122	Commercial & Industrial Practices	3	0	9	6
WLD	1123	Inert Gas Welding	<u>1</u>	<u>0</u>	<u>3</u>	<u>2</u>
			4	0	12	8
Fourth Quarter (Summer)						
WLD	1112	Mechanical Testing and Inspection	1	0	3	2
WLD	1124A	Pipe Welding	2	0	6	4
BPR	1108	Basic Mechanical Blueprint Reading	<u>1</u>	<u>2</u>	<u>0</u>	<u>2</u>
			4	2	9	8
Fifth Quarter (Fall)						
WLD	1124B	Pipe Welding	1	0	6	3
MAT	1101A	Fundamentals of Mathematics	<u>4</u>	<u>0</u>	<u>0</u>	<u>4</u>
			5	0	6	7
Sixth Quarter (Winter)						
WLD	1125	Certification Practices	3	0	6	5
MAT	1101B	Fundamentals of Mathematics	1	0	0	1
MAT	1103	Geometry	3	0	0	3
MEC	1124	Metallurgy	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			10	0	6	12
Seventh Quarter (Spring)						
ELC	1119	Electricity for Welders	3	2	0	4
ENG	1102	Communication Skills	3	0	0	3
PSY	1101	Human Relations	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
			9	2	0	10
Eighth Quarter (Summer)						
BPR	1117	Blueprint Reading: Welding	1	2	0	2
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
BUS	1103	Small Business Operations	3	0	0	3
DFT	1126	Pattern Development and Layout	0	3	0	1
MES	1112	Machine Shop Processes	<u>1</u>	<u>0</u>	<u>3</u>	<u>2</u>
			5	5	3	8
Program Totals			43	9	60	67

EVENING PROGRAMS IN COLLEGE TRANSFER

CURRICULUM REQUIREMENTS FOR THE Associate in Arts (A.A.) Degree

Requirements (67 Quarters Hours)	Quarter Hours
Communications ENG 153, 154	10
Computing	3
Humanities and Fine Arts ENG 204 and courses selected from Art, English, History, Music, and Philosophy	18
Mathematics Courses should be selected according to proposed major. MAT 101 is required.	10
Science Courses selected must include one (1) three-quarter sequence of a laboratory science. Options include transfer courses in biology, chemistry, and physics. Science course sequences may consist of : • Biology: BIO 101, 102, 103, or <u>BIO 201</u> and any two of the following: <u>BIO 202, 203, 204,</u> <u>205</u> • Chemistry: <u>CHM 150, 151, 152,</u> CHM 200, 201, 202, or CHM 210, 211, 212 • Physics: Three of the following four courses - PHY 111, 112, 113, 114, or <u>PHY 201, 202, 203</u> Note: The recommended sequences are Underlined.	12
Social Science Courses selected from Anthropology, Geography, Political Science, Psychology, and Sociology	12

Physical Education	3
Required Electives	28
Preprofessional Cognate* or General Courses	
Total Quarter Hours	96

*These preprofessional cognate and general courses should be selected carefully and in coordination with the senior institution.

Major area courses for college transfer programs are defined as courses offered by the Arts and Sciences Division and require a minimum grade of C for all courses submitted for graduation.

ASSOCIATE IN ARTS DEGREE

Evening Program Model of Quarterly Course Sequence*

			Hrs Per Week			Credit
			Class	Lab		Hrs.
First Quarter (Fall)						
ENG	153	Composition and Introduction to Literature	5	0		5
MAT	101	Algebra and Trigonometry I	<u>5</u>	<u>0</u>		<u>5</u>
			10	0		10
Second Quarter (Winter)						
ENG	154	Composition and Research	5	0		5
MAT		Mathematics Elective	<u>5</u>	<u>0</u>		<u>5</u>
			10	0		10
Third Quarter (Spring)						
HUM		Humanities Elective	3	0		3
PED		Physical Education Elective	0	3		1
SCI		Science Sequence - Course I	<u>3</u>	<u>3</u>		<u>4</u>
			6	6		8
Fourth Quarter (Fall)						
CAS	101	Introduction to Computing Concepts	2	2		3
GEN		General Elective	3	0		3
SCI		Science Sequence - Course II	<u>3</u>	<u>3</u>		<u>4</u>
			8	5		10
Fifth Quarter (Winter)						
HUM		Humanities Elective	3	0		3
SCI		Science Sequence - Course III	3	3		4
SOC		Social Science Elective	<u>3</u>	<u>0</u>		<u>3</u>
			9	3		10
Sixth Quarter (Spring)						
ENG	204	Oral Communications	3	0		3
GEN		General Elective	3	0		3
HUM		Humanities Elective	3	0		3
PED		Physical Education Elective	<u>0</u>	<u>3</u>		<u>1</u>
			9	3		10

*Course sequence and hours may vary depending on courses selected.

		Hrs Per Week		Credit
		Class	Lab	Hrs.
Seventh Quarter (Fall)				
GEN	Two General Electives	7	0	7
HUM	Humanities Elective	3	0	3
SOC	Social Science Elective	<u>3</u>	<u>0</u>	<u>3</u>
		13	0	13
Eight Quarter (Winter)				
GEN	Two General Electives	7	0	7
HUM	Humanities Elective	3	0	3
SOC	Social Science Elective	<u>3</u>	<u>0</u>	<u>3</u>
		14	0	14
Ninth Quarter (Spring)				
GEN	Two General Electives	7	0	7
PED	Physical Education Elective	0	3	1
SOC	Social Science Elective	<u>3</u>	<u>0</u>	<u>3</u>
		10	3	11
Program Totals		89	20	96

CURRICULUM REQUIREMENTS FOR THE Associate in Science (A.S.) Degree

Requirements (75 Quarter Hours)	Quarter Hours
Communications ENG 153, 154	10
Computing	3
Humanities and Fine Arts ENG 204 and courses selected from Art, English, History, Music, and Philosophy	6
Mathematics For most math/science programs, courses selected should include the Calculus sequence. MAT 151 and MAT 152 are required.	20
Science* Courses selected must include two (2) three-quarter sequences (12 credit hours each) of laboratory science. Options include transfer courses in Biology, Chemistry, and Physics Science course sequences may consist of: Biology: <u>BIO 101, 102, 103</u> or <u>BIO 201</u> and any two of the following - <u>BIO 202, 203, 204, 205</u> Chemistry: <u>CHM 200, 201, 202</u> or CHM 210, 211, 212 Physics: Three of the following four courses <u>PHY 111, 112, 113, 114</u> or <u>PHY 201, 202, 203</u> Note: The recommended sequences are underlined.	24

Social Science	9
Courses selected from Anthropology, Geography, Political Science, Psychology, and Sociology	
Physical Education	3
Required Electives (21 Quarter Hours)	21
Preprofessional Cognate** or General Courses	
Total Quarter Hours	96

Major area courses for college transfer programs are defined as courses offered by the Arts and Sciences Division and require a minimum grade of C for all courses submitted for graduation.

ASSOCIATE IN SCIENCE

Evening Program Model of Quarterly Course Sequence*

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
ENG	153	Composition and Introduction to Literature	5	0	5
MAT	150	Pre-calculus Mathematics	5	0	5
PED		Physical Education Elective	0	3	1
			10	3	11
Second Quarter (Winter)					
ENG	154	Composition and Research	5	0	5
ENG	204	Oral Communications	3	0	3
MAT	151	Calculus and Analytic Geometry I	5	0	5
			13	0	13
Third Quarter (Spring)					
CAS	101	Introduction to Computing Concepts	2	2	3
GEN		General Elective	3	0	3
MAT	152	Calculus II	5	0	5
			10	2	11
Fourth Quarter (Fall)					
MAT	202	Calculus III	5	0	5
PED		Physical Education Elective	0	3	1
SCI		First Science Sequence, Course I	3	3	4
			8	6	10
Fifth Quarter (Winter)					
MAT	203	Calculus IV (Elective)	5	0	5
PED		Physical Education Elective	0	3	1
SCI		First Science Sequence, Course II	3	3	4
			8	6	10
Sixth Quarter (Spring)					
GEN		General Elective	4	0	4
SCI		First Science Sequence, Course III	3	3	4
SOC		Social Science Elective	3	0	3
			10	3	11

* Course sequence and hours may vary depending on courses selected.

		Hrs. Per Week	Credit
		Class	Lab Hrs
Seventh Quarter (Fall)			
GEN	General Elective	3	0 3
SCI	Second Science Sequence, Course I	3	2 4
SOC	Social Science Elective	<u>3</u>	<u>0</u> <u>3</u>
		9	2 10
Eighth Quarter (Winter)			
GEN	General Elective	3	0 3
SCI	Second Science Sequence, Course II	3	2 4
SOC	Social Science Elective	<u>3</u>	<u>0</u> <u>3</u>
		9	2 10
Ninth Quarter (Spring)			
GEN	General Elective	3	0 3
HUM	Humanities Elective	3	0 3
SCI	Second Science Sequence, Course II	<u>3</u>	<u>2</u> <u>4</u>
		9	2 4
Program Totals		86	26 96

GENERAL TECHNOLOGY CURRICULUM CORE

General Technology Curriculum Core is designed as a career mobility program for technical students to acquire the general education and related courses in subject areas such as humanities, communications, social sciences, and theoretical and applied sciences such as biology, chemistry, physics, mathematics, general computer studies and general graphics (drafting) that are foundation courses to specific curriculums in the technical field. After completion of this certificate curriculum, the student has job skills for occupations requiring communications skills and/or science and mathematics. The student may take this program as the first level in a specific technical curriculum as an intended objective component of that technical curriculum. Students may also take this program for transfer to a technical curriculum at another community college system institution either prior to or concurrently with enrollment at the institution at which they intend to pursue or are pursuing a technical curriculum degree.

Job Opportunities

Lab Assistance, research
 Technicians Assistance
 Employment Clerk
 Customer Service Representative
 Admissions evaluator (education)

GENERAL TECHNOLOGY CURRICULUM CORE

Certificate

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Skills	
RELATED COURSES						
BIO	101	Human Anatomy and Physiology I	4	3	0	5
BIO	102	Human Anatomy and Physiology II	4	3	0	5
Related Electives*						(14)(16)
						24

*Related Electives chosen according to occupational goals from curriculum courses offered by the College to total at least 24 quarter hours of degree-level credit for this section of courses.

GENERAL EDUCATION

ENG	204	Oral Communications	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
SOC	201	Social Problems	3	0	0	3
General Education Electives**						9
						18

**A total of at least nine (9) quarter hours of degree-level credit of general education electives chosen according to occupational goals from English, social science, and/or humanities curriculum courses offered by the College.

ELECTIVES***

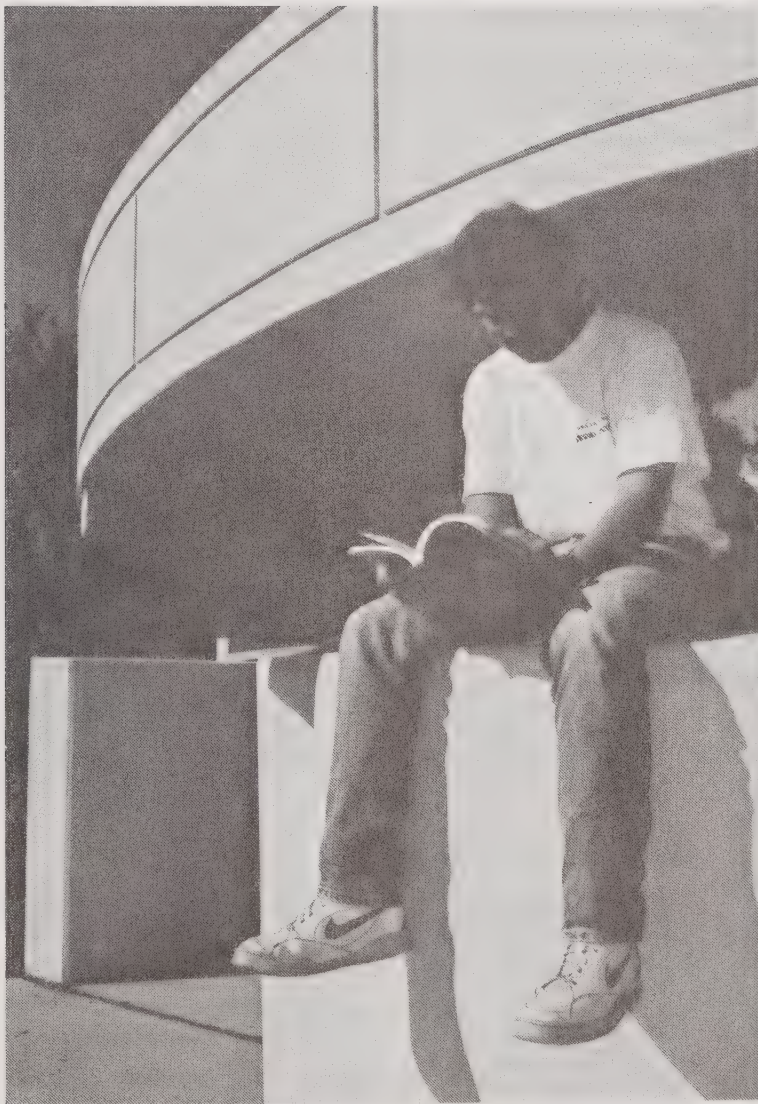
***In addition to the program requirements previously stated, a minimum of six (6) credit hours of electives must be selected from degree-level courses.

The total number of credit hours for this Certificate program is 48.



Culinary Technology students prepare giant hoagies for campus guests.

COURSE DESCRIPTIONS



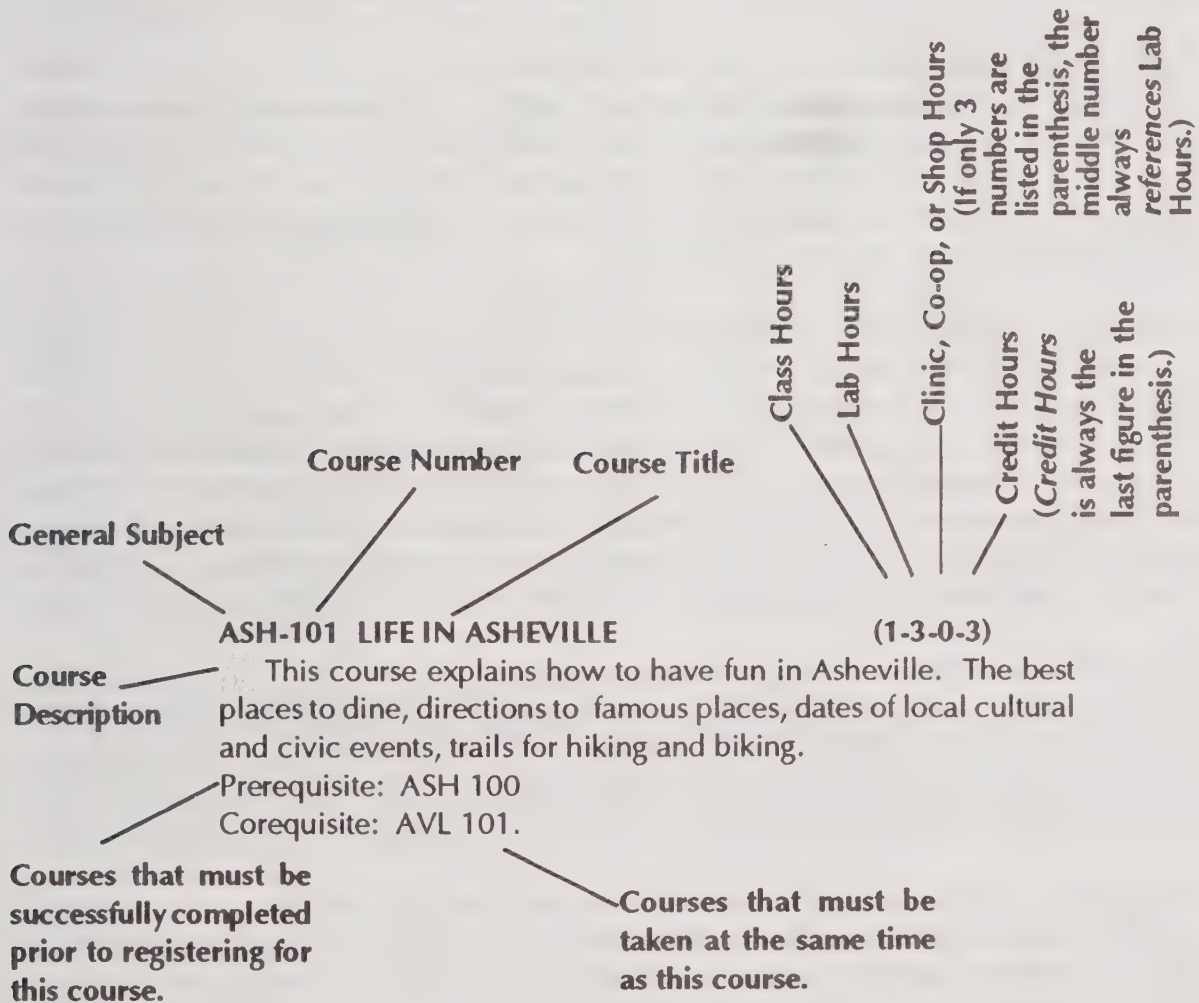
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COURSE DESCRIPTIONS

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The following example explains each component of the course description entry.



Please examine each course description before registering and determine if all prerequisites have been met. Prerequisites shown are those courses that must be successfully completed before attempting further study. In certain cases the department chairperson may waive some prerequisites.

*Credit by Examination is not available for courses marked with an asterisk because of the nature of the course and in some cases safety requirements in the use of equipment. Any exceptions must be with the approval of the department chairperson.

Air Conditioning, Heating, and Refrigeration

AHR-1121 Fundamentals of Refrigeration: Domestic (3-0-12-7)

Terminology, laws of refrigeration, absolute pressure, and absolute temperature, energy conversion units, specific heat, latent heat, and sensible heat; measurement of heat in quantity and intensity; ton of refrigeration, pressure - temperature relationships, transfer of heat by conduction, convection, and radiation; elementary refrigeration, refrigeration cycle and domestic refrigeration circuits and controls. Tools, materials, and methods applicable to refrigeration; bending and joining tubing. Safety practices will be stressed. Emphasis will be placed on domestic equipment because of its basic nature. Prerequisite: None.

AHR-1122 Fundamentals of Refrigeration: Commercial (3-0-12-7)

Commercial refrigeration installation and servicing of display cabinets, walk-in coolers and freezer units and mobile refrigeration systems are studied. Catalogs are used to calculate heat loads, sizing, and matching system components and to study circuits and controls, refrigerants, oils, and methods. The E.P.A. guidelines for refrigeration are studied and their principles practiced. Prerequisite: AHR 1121.

AHR-1123 Principles of Air Conditioning (3-0-9-6)

Work includes the selection of various heating, cooling, and ventilating systems, investigation and control of factors affecting air cleaning, movements, temperature, and humidity. Use is made of the psychrometric chart and sling psychrometer in determining needs to produce optimum temperature and humidity control. Commercial air conditioning equipment is assembled and tested. Heating and cooling loads are estimated and duct pressures are studied. Circuit and controls, both electric and pneumatic, are applied to heating and cooling. Practical sizing and balancing of duct work is performed as needed. Prerequisite: None.

AHR-1124 Principles of Heating: Fuels and Burners (2-0-6-4)

Fuels and burners used in supplying heat for various types of heating systems are studied. Experiments in equipment selection, installation, adjustments and servicing will be conducted. Emphasis will be placed on service and repair of warm air systems, heat emitter, electric heating, and forced hot water heating systems. Corequisite: AHR 1123.

AHR-1126 All Year Comfort Systems and Air Conditioning Servicing (2-0-9-5)

This course offers the student the opportunity to study year-round comfort systems, and practice testing, troubleshooting, servicing and repairing air conditioners and heat pumps. Prerequisite: AHR 1122 or Instructor's Approval.

AHR-1127 Duct Construction and Maintenance (2-0-6-4)

A study of various duct materials including sheet steel, aluminum, fiberglass, and plastic is made. The student practices the sizing and development of duct systems for proper air flow. The student will study and service various duct systems and perform repairs including ducts made of fiberglass. A study is made of duct fillings, dampers and regulators, diffusers, fans, and insulation. Simple duct section types, elbows and transitions are constructed. Prerequisite: DFT 116. Corequisite: AHR 1126.

Anthropology

ANT-101 Introduction to Anthropology (3-0-3)

The study of the archeological, language, and social evidence of human biological and cultural development, including a comparative study of kinship, religion, politics, and subsistence patterns, using the methods and theories of anthropology. Prerequisite: None.

Administrative Office Technology

AOT-100 Computer Keyboarding (1-2-2)

A computer-based course to develop touch keyboarding skill in entering data at the computer workstation. Alpha, numeric, and symbol keys are taught stressing accuracy. The numeric keypad is used for data entry. Speed is given emphasis. Minimum competency speed requirement is 20 wpm. A-B Tech credit only. Prerequisite: None.

AOT-101 Keyboarding for Office Occupations (2-3-3)

Designed and required for office education majors, a computer-based course which introduces keyboarding fundamentals (keyboard control and techniques) as well as the numeric keypad, correspondence, centering, and tabulation applications. Minimum competency speed requirement is 25 wpm for three minutes. Prerequisite: None.

AOT-103 Document Formatting (2-3-3)

Production work continues on letters, memos, reports, and tables. Form typing is introduced. Minimum competency speed requirement is 36 wpm for five minutes. Prerequisite: AOT 101 or equivalent.

AOT-105 Document Production (2-3-3)

Speed-building emphasis continues with increased attention to accuracy. Development of sustained production on correspondence, tables, and reports is stressed. Minimum competency speed requirement is 48 wpm for five minutes. Prerequisite: AOT 103 or equivalent.

AOT-112 Speedwriting Shorthand (2-3-3)

This course introduces the students to theory and dictation practice using Speedwriting. Speedwriting is an alphabetic shorthand system that uses only familiar letters and punctuation marks. Shorthand skills aid in more effective communication for greater office productivity. Prerequisite: AOT 101 or keyboarding skill at 32 wpm within 4 errors.

AOT-113 Speedwriting Dictation and Transcription (2-3-3)

This is a continuing study of Speedwriting that emphasizes output. The course is designed to review principles learned in AOT 112 and to introduce students to the development of skills needed to produce mailable documents. Prerequisite: AOT 112

AOT-114 Advanced Speedwriting for the Automated Office (2-3-3)

Increased skill building and accuracy of transcribed notes in mailable formats are the goals of the third quarter of Speedwriting. Letters and memorandums are included; however, the productive employment of shorthand notes for recording instructions and telephone messages, notetaking, and word processing input are included to prepare the student for productive use of Speedwriting in an automated office. Prerequisite: AOT 113.

AOT-115 Information Processing Concepts (3-0-3)

An introduction to computerized administrative support. Organization concepts, skills, and procedures; desktop organizers and personal information management software; traditional and electronic information resources; processing information; managing output and time; decision making; communication systems; the automated workstation environment; and the changing office are studied. Prerequisite: None.

AOT-117 Word Processing**(2-3-3)**

Teaches the student how to perform basic word processing tasks, such as formatting, editing, saving, and printing documents. Essential topics such as moving blocks, search and replace, spell check, use of the thesaurus, typing enhancements, and merging are also covered. Prerequisite: AOT 101 or typing skill of 25 wpm with no more than three errors for three minutes.

AOT-120 Personal and Professional Development**(3-0-3)**

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personal and professional improvement. Prerequisite: None.

AOT-125 Text Editing Skills**(3-0-3)**

A course designed with emphasis placed upon punctuation and grammar skill building and use of reference manuals to assist in editing text on a word processor. Prerequisites: AOT 101 and ENG 101.

AOT-200 Microcomputer Operations**(1-3-2)**

This course is designed to provide students the basic skills necessary to effectively use computers to solve common business problems. Spreadsheet application software will be presented. Prerequisite: CAS 101 or CAS 104.

AOT-201 Records Management**(3-0-3)**

A comprehensive study of records management systems including the records manager and staff; inventory; retention and legal considerations; active, inactive, and vital records; manual, automated, and computer-based systems; and image technology. ARMA indexing rules are used and minimum competency tests are given on alphabetic, subject, numeric, and geographic data. Prerequisite: None.

AOT-202 Software Management for Administrative Support**(1-2-2)**

This course is designed to present user-oriented fundamentals of files management in a microcomputer hard disk environment. Hard disk management will focus on two processes—organizing programs and data and protecting them. Utility software including DOS and other commercial applications will be explored. Prerequisite: AOT 200.

AOT-208 Administrative Support Systems and Procedures I*(3-2-4)**

Designed to acquaint the student with the responsibilities of administrative support encountered in the integrated office. These include the following: office systems and the flow of information, telecommunications technology, telephone techniques, time management, arranging meetings and conferences, planning travel, and setting career goals for advancement and professional growth. Prerequisites: AOT 115, AOT 117, and AOT 201.

AOT-209 Administrative Support Systems and Procedures II*(3-2-4)**

This course places emphasis on human relations studies and on preparing for pre-employment testing through the use of a series of tests designed for business, government, and industry. Prerequisite: AOT 208.

AOT-214 Machine Transcription**(2-3-3)**

The student will learn how to transcribe letters and other office communications using the microcomputer. The student will be expected to produce, from audiotapes, mailable business correspondence which is free from punctuation, spelling, and formatting errors. Prerequisites: AOT 105 and either AOT 125 or OTC 110.

AOT-216 Payroll Procedures (3-2-4)

This course prepares the student to perform payroll recordkeeping tasks including maintaining employee earnings records, the computation and recordkeeping of deductions, and the preparation of employee and employer reporting forms. Prerequisite: BUS 117.

AOT-217 Advanced Word Processing (2-3-3)

Job performance competency is sought using advanced word processing functions. Print options and enhancements, graphics, text columns, outlining, footnoting, using macros and styles, using math features, and sort and select are presented. Prerequisite: AOT 117.

AOT-218 Desktop Publishing (2-2-3)

The study and utilization of professional desktop publishing software to design and produce professional-looking documents containing both text and graphics. Prerequisite: AOT 117.

AOT-219 Advanced Desktop Publishing/Graphics Design (1-2-2)

This course further develops the student's skill in desktop publishing through advanced projects. In addition to desktop publishing software, various graphics software and related design techniques and principles will be used to produce forms, documents, publications, and presentation materials. Prerequisite: AOT 218.

AOT-220 Office Skills Reinforcement (2-3-3)

This course is designed as an intensive skills reinforcement to build office support skills gained in curriculum courses. Keyboarding and computer skills are refined. The student increases his/her ability to communicate via the written word in generally accepted business-like terms by composing replies to a variety of letters and memorandums. Prerequisites: Seventh Quarter Status.

AOT-230 Office Supervision (3-0-3)

Emphasis is on building good human relationships in management. The student will be involved in role playing, group consensus problem-solving sessions and case study analysis. Topics relating to the responsibilities of the office manager in the changing office environment will be presented. Prerequisite: None.

AOT-250 Office Systems and Technology Management (1-3-2)

The management of office technology is emphasized. The student researches topics relating to current technological advances including the analysis and purchase of hardware and software used to manage information. Hands-on experience using integrated software suites such as the Office Professional will be introduced. Prerequisites: AOT 117 and AOT 200.

AOT-260 Emerging Technologies (1-2-2)

This course is designed to provide opportunities to explore emerging technologies as well as hardware, software, and technology applications not included in developed courses. Technologies will be identified for research and presentation. Students will also install and learn software by utilizing problem-solving methods. Prerequisite/Corequisite: AOT 202.

Art

ART-101 Introduction to Art (3-0-3)

A survey of art history and appreciation with emphasis on understanding the meaning and form which the visual arts have taken throughout history. Prerequisite: None.

ART-102 Basic Drawing (2-2-3)

A study of two-dimensional composition, with emphasis on structure and texture found in nature and man-made forms. Prerequisite: None.

ART-103 Basic Two-Dimensional Materials (2-2-3)

An introduction to materials and techniques of two-dimensional design, including pencil, charcoal, ink, watercolor, chalk, conte crayon, and various paints. Prerequisite: ART 102.

ART-104 An Introduction to Art II (3-0-3)

Further exploration of historical styles in art from the High Renaissance through the twentieth century. Prerequisite: ART 101.

Automotive

AUT-100 Preventive Maintenance and Safety Inspection (2-2-0-3)

Introduction to the automobile and the automobile workplace. Shop safety and equipment will be covered. Preventive maintenance as required by the manufacturers will help train the student as well as make them more confident in the workplace. North Carolina State Safety Inspections will be covered. Prerequisite: None.

AUT-101 Internal Combustion Engines I (2-4-0-4)

Basic principles of internal combustion engines are explored. Safety, use of measuring tools, hand tools, and principles of operation are covered. Engine repairs will emphasize the upper engine including: cylinder head replacement, valve train repairs, manifold replacement, compression testing, and cylinder leak testing. Prerequisite: None.

AUT-102 Internal Combustion Engines II (2-4-0-4)

A continuation of AUT 101, this course provides the practical application of engine repairs. Topics and repairs will include: pistons, rings, crankshafts, connecting rods and oil pumps. This course completes preparation for a complete engine overhaul. Prerequisites: AUT 101 and AUT 152.

AUT-103 Electrical Systems I (2-4-0-4)

This course provides the concepts of basic electricity and fundamentals of engine-related electrical devices. Repair and service procedures of batteries, starting and charging systems and ignitions are covered. Troubleshooting procedures using basic and special tools and equipment will be stressed. Prerequisite: None.

AUT-104 Electrical Systems II (2-2-0-3)

This course provides use of various test instruments: analog meters, digital meters, oscilloscopes. Equipment usage will include engine electrical analyzers and will stress troubleshooting, starting, charging, and ignition systems of the engine. Prerequisites: AUT 103 and AUT 152.

AUT-105 Basic Automotive Fuel Systems (2-4-0-4)

This course covers principles of automotive fuel systems. Emphasis is placed on fuel delivery systems, fuel pumps, and intake systems. Prerequisite: AUT 152.

AUT-152, 154, 156, 158 Cooperative Work Experience (0-0-30-3)

Full-time work experience with an automobile dealership during alternating quarters is required for students enrolled in the Automotive Service Technician program. Upon completion of their work experience, students should be able to produce and describe a master work log sheet containing the various types and number of job tasks completed in an automotive dealership; demonstrate the acquired skills to make the transition from the classroom and lab to a job in the automotive industry with minimum difficulty. The work experience will emphasize diagnosis and repair of engines; electrical/electronic systems; brakes, steering and suspension systems; computerized engine control; manual transaxle and automatic transmissions. Work experience will be coordinated according to student status in the program to emphasize work that is related to previously studied topics. Prerequisite: Full admission to the Automotive Service Technician program, satisfactory progress, and Departmental Approval.

AUT-201 Automotive Chassis and Suspension Systems I (2-4-0-4)

This course provides an understanding of principles and functions of the components of automotive chassis and suspension systems. Topics will include: Adjustment of wheel bearings, proper torquing of wheels and suspension parts, replacement of suspension components, and steering units. Prerequisite: AUT 154.

AUT-202 Automotive Chassis and Suspension Systems II (2-2-0-3)

This course covers the practical application of repairs of chassis and suspension systems. Emphasis is placed on diagnosis and repair of all steering components. Upon completion, students will be able to perform work on live vehicles using manufacturers' procedures. Alignment and wheel balance will be stressed. Prerequisites: AUT 156 and AUT 201.

AUT-203 Automotive Power Trains I (2-4-0-4)

This course provides principles and functions of the automotive power train systems. Topics include clutches, manual transmissions, drive shaft assemblies, differentials, and transaxles. Prerequisite: AUT 154.

AUT-204 Automotive Power Trains II (2-4-0-4)

This course leads the student into automatic transmissions. It covers transmission principles, hydraulic principles, automatic overdrive, and automatic transaxles. Prerequisites: AUT 156 and AUT 203.

AUT-205 Automotive Heating and Air Conditioning (2-2-0-3)

This course covers principles of heating and refrigeration. Topics include testing, service, and repair of compressors, Expansion valves, and other components of air conditioning systems. Prerequisite: AUT 156.

AUT-206 Brake Systems (2-2-0-3)

A study of various braking systems on automobiles and light trucks. Drum brakes and disc brakes including ABS will be explored to understand their operation and the methods of service and repair. Prerequisite: AUT 154.

AUT-207 Automotive Electronics (3-2-0-4)

This course covers basic electronically controlled systems on automobiles. Emphasis is placed on electrically and computer controlled systems. Prerequisite: ELN 150.

AUT-208 Automotive Electronic Controlled Systems (3-2-0-4)

This course covers electronically controlled systems on late model cars. Topics include computers and braking systems. Students study, diagnose, and service electronically controlled systems. Prerequisites: AUT 158 and AUT 207.

AUT-209 Automotive Emission Control Systems (2-2-0-3)

This course emphasizes emission control systems on late model automobiles. It includes troubleshooting, testing, and servicing emission control systems. Prerequisite: AUT 154.

AUT-210 Automotive Fuel Injection (3-2-0-4)

This course covers automotive fuel injection systems. Throttle body injection, port fuel injection and sequential port fuel injection will be studied. The operation of each system will be studied as well as how to test, troubleshoot, and repair the fuel injection systems. Prerequisites: AUT 105 and AUT 158.

AUT-211 Engine Performance and Drivability (2-6-0-5)

This course is designed to use all the skills the student has gained from previous engine, fuel, and electrical/electronics courses in developing a technician who understands the modern engine. Emphasis will be on diagnosing and repairing problems related to the operations of the engine within limits set by the manufacturer. Prerequisite: Completion of all AUT courses in the First Seven Quarters or Departmental Approval.

AUT-1101 Internal Combustion Engine (6-0-6-8)

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. Study of the construction and operation of components of internal combustion engines. Testing of engine performance; servicing and maintenance of engine block, crankshaft, pistons, valves, cams, and camshafts, fuel and exhaust systems; cooling systems; proper lubrication; and methods of testing, diagnosing, and repairing. Prerequisite: None.

AUT-1102 Engine Electrical and Fuel Systems (6-0-6-8)

A thorough study of the electrical and fuel systems of the automobile. Battery, cranking mechanism, charging systems (both internal and external regulators), ignitions systems (a thorough coverage of both the conventional and HEI systems), accessories and wiring, fuel pumps, carburetors, and fuel injection systems. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel and electrical system including the pollution devices. Prerequisite: AUT 1101 or Departmental Approval.

AUT-1121 Braking Systems (2-0-3-3)

A complete study of various braking systems, including anti-lock braking systems employed on automobiles and light-weight trucks. Emphasis is placed on how they operate, proper adjustment, and repair. Prerequisite: PHY 1101 or Departmental Approval.

AUT-1122 Automotive Electronics and Control Systems (4-2-0-5)

This course covers the basic electronic and computer controlled systems on automobiles. Emphasis is on diagnosis and service of these systems. Prerequisite: AUT 1102 or Departmental Approval.

AUT-1123 Automotive Chassis and Suspension Systems (3-0-6-5)

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension, and steering systems. Units to be studied will be McPherson struts, springs, steering systems (conventional and rack and pinion), steering linkage, shock absorbers, wheel alignment on rear wheel and front wheel drive vehicles, and vehicles requiring four-wheel alignment. Prerequisite: PHY 1101 or Departmental Approval.

AUT-1124 Automotive Power Train Systems (4-0-6-6)

Principles and functions of automotive power train systems; clutches, transmission gears, conventional and computer controlled automotive transmissions, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing, and repair. Prerequisites: AUT 1123 and PHY 1101.

AUT-1125 Automotive Servicing (6-0-6-8)

Emphasis is on the shop procedures necessary in determining the nature of trouble developed in the various component systems of the automobile. Troubleshooting of automotive systems, providing a full range of experiences in testing, adjusting, repairing and replacing. Prerequisites: AUT 1121, AUT 1123, and AUT 1128.

AUT-1128 Automotive Air Conditioning (2-2-0-3)

General introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system. Prerequisite: PHY 1101 or Departmental Approval.

Biology

BIO-090 Introduction to Biology (5-0-5)

This pre-college course is designed to strengthen the students knowledge in the biological sciences. Emphasis will be upon the structure and functions of the human body. Prerequisite: None.

BIO-101 Human Anatomy and Physiology I (4-3-5)

A study of the structure and normal functions of the human body and its systems with emphasis upon the interrelated functions of various parts and systematic processes in the development of basic physiological principles. Prerequisite: None.

BIO-102 Human Anatomy and Physiology II (4-3-5)

A continuation of BIO 101. Prerequisite: BIO 101.

BIO-103 Microbiology (4-3-5)

This is a study of microorganisms, pathogenic and non-pathogenic, their relation to disease, community problems and implications for proper health techniques. Prerequisite: None.

BIO-111 Basic Life Sciences**(5-0-0-5)**

A study of the normal structure and function of the human body. Elementary principles and concepts of chemistry and microbiology are included. Prerequisite: None.

BIO-201 Principles of Biology**(3-3-4)**

An introduction to the fundamental principles of biology, including cell structure, chemistry, function, development, adaptation, and reproduction. Prerequisite: None.

BIO-202 General Zoology**(3-3-4)**

Classification, relationships, structure, and function of major animal groups. Prerequisite: BIO 201.

BIO-203 General Botany**(3-3-4)**

Classification, structure and function, ecology of plants. Emphasis given to seed plants. Prerequisite: BIO 201.

BIO-204 Principles of Ecology**(3-3-4)**

A study of the past and present relationships of man with his biological environment. Ecological concepts and effects of population growth, pollution, and conservation of natural resources. Prerequisite: BIO 102 or BIO 201.

BIO-205 Natural History of the Southern Appalachians**(3-3-4)**

This course offers the student an opportunity to study the natural flora and fauna of the Southern Appalachians. A series of lectures and laboratory field trips will enable the student to develop an appreciation of the ecological relationships of our region. Prerequisite: None.

BIO-299 Special Topics in Biology**(1-2-2)**

This course will provide students an opportunity to intensively investigate topics in biology not covered in other curriculum courses. Special topics may include natural history, genetics, etc. Prerequisite: Departmental Approval.

BIO-1109 Biomedical Sciences**(4-2-0-5)**

This course covers the basic fundamentals and principles of anatomy, physiology, and microbiology, which provide a foundation for certain dental science courses. Prerequisite: None.

Basic Law Enforcement Training

BLE-100 Basic Law Enforcement Training**(16-0-30-26)**

The Basic Law Enforcement Training course prepares individuals to take the Law Enforcement Officers certification examination mandated by the North Carolina Criminal Justice Education and Training Standards Commission, and/or it prepares individuals to take the Justice Officers Basic Training certification examination mandated by the North Carolina Sheriffs' Education and Training Standards Commission. Successful completion of this curriculum certificate program requires that the student satisfy the minimum requirements for certification by the Criminal Justice Commission and the Sheriffs' Commission. The student satisfactorily completing this course should possess at least the minimum degree of general attributes, knowledge, and skills to function as an inexperienced law enforcement officer. Prerequisite: None.

Blueprint Reading

BPR-101 Architectural and Construction Blueprint Reading (3-0-0-3)

Interpretation and reading Architectural Blueprints. Reading elevations, floor plans, symbols, notes, scales, construction types, interior and exterior details as related to a set of working drawings for a residence. Prerequisite: None.

BPR-1104 Blueprint Reading: Mechanical (1-2-0-2)

Interpretation and reading the blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes. Prerequisite: None.

BPR-1105 Blueprint Reading: Mechanical (1-2-0-2)

Further practice of interpretation of blueprints as they are used in the industry; study of prints supplied by industry; making plans of operations; introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes. Prerequisite: BPR 1104.

BPR-1106 Blueprint Reading: Mechanical (1-2-0-2)

Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts and mechanisms for features of fabrication, construction and assembly. Prerequisite: BPR 1105.

BPR-1107 Blueprint Reading: Construction Trades (1-2-0-2)

How to read pictorial and orthographic drawings. Reading elevations, floor plans, symbols, notes, scales, construction types, interior and exterior details as related to a set of working drawings for a residence. Prerequisite: None.

BPR-1108 Basic Mechanical Blueprint Reading (1-2-0-2)

This course is designed to give the student an understanding of Industrial Blueprints. Emphasis will be placed on the study of basic lines, views, dimensions, notes, symbols, and industrial practice as related to the reading and interpreting of drawings. Prerequisite: None.

BPR-1109 Blueprint Reading: Construction Trades (1-2-0-2)

Advanced reading of design variations, construction materials, practices, planning, general construction specifications and heavy construction. Prerequisite: BPR 1107.

BPR-1116 Blueprint Reading: Air Conditioning (2-2-0-3)

Reading of working prints, exploded drawings, wiring schematics, equipment layouts, shop sketches, building codes, heat systems, standards and symbols. Prerequisite: None.

BPR-1117 Blueprint Reading: Welding (1-2-0-2)

A thorough study of trade drawings in which welding procedures are indicated. Interpretation, use and application of welding symbols, abbreviations, and specifications. Prerequisite: BPR 1108.

***BPR-1208 Blueprint Reading: Tool and Die (1-4-0-3)**

A complete and thorough knowledge of tool and die prints will be required. Industrial prints will be used in this course. The difference between production drawings or operation sheets and tools drawing will be presented. Assembly drawings as the piece fits into place will be broken down into each detail print required. Prerequisite: DFT 1207.

Business Administration

BUS-100 Contemporary Business (3-0-3)

A study of business as the activating element in an enterprise system striving to achieve a combination of human, material, and capital resources to satisfy the needs and wants of people. An introduction to business from the professional (as opposed to the consumer) viewpoint. Prerequisite: None.

BUS-101 Introduction to Business (3-0-3)

A survey of the business world with particular attention devoted to the structure of the various types of business organizations, methods of financing, internal organization, and management. Prerequisite: None.

BUS-114 Business Law (5-0-5)

A survey course designed to acquaint the student with certain fundamentals and principles of business law, including general contracts, bailments, sales contracts, commercial paper, agency employer and employee relations with UCC applications. Prerequisite: None.

BUS-117 Clerical Accounting I (5-2-6)

Basic accounting theory and applications are presented through the sequential steps of the accounting cycle. The accounting data are collected from source documents, the causative business transactions are analyzed, and the financial information is recorded and summarized. Computer processing of accounting data is introduced. Prerequisite: None.

BUS-118 Clerical Accounting II (5-2-6)

The processing of information involving transactions of a similar nature is studied as accounting subsystems. The cash receipts and payments and sales and purchases subsystems are given extensive practical emphasis in direct-entry, double-entry, and computer data processing formats. Prerequisite: BUS 117 or BUS 120.

BUS-120 Accounting I (3-2-4)

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned. Prerequisite: None.

BUS-121 Accounting II (3-2-4)

A continuation of principles including a study of internal accounting controls, receivables, inventories, equipment, depreciation and payroll accounting. Emphasis is placed on interpreting data for management control. A computerized practice set is required for course credit. Prerequisite: BUS 120.

BUS-122 Accounting III (3-2-4)

A study of financial accounting as it relates to partnerships and corporations. Topics include partnership formation, income division, partnership liquidation, corporation formation and organization, long-term liabilities and investments, and statement of cash flows. Prerequisite: BUS 121.

BUS-123 Finance (5-0-5)

An introduction to managerial finance with emphasis on maximization of stockholder wealth. Financial analysis and planning sources and uses and capital budgeting are included. Prerequisites: BUS 121, ECO 105, and MAT 112.

BUS-125 Introduction to Banking Fundamentals (4-0-4)

The study and application of bank fundamentals. Emphasizes current trends in philosophy and position of management. Prerequisite: None.

BUS-164 Real Estate Law (3-0-3)

This course is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses necessary to qualify for the State Board Broker's Exam. Prerequisite: BUS 296.

BUS-165 Real Estate Brokerage Operations (3-0-3)

This is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses to qualify for the State Broker's Exam. Topics covered include real estate brokerage, closing procedures, contracts, and trust account guidelines. Prerequisite: BUS 296.

BUS-170 Introduction to Real Estate Appraisal (3-0-3)

This course introduces the student to the subject of real estate appraisal and prepares the student for the course on *Valuation Principles and Procedures*. It begins with coverage of basic real property law, followed by coverage of the various concepts of value and the operation of real estate markets. Relevant mathematical concepts are then reviewed and the student is introduced to statistical concepts used in appraisal practice. Next comes coverage of real estate financing terminology and practices, followed by an introduction to the basics of residential construction and design. The student is then provided an overview of the entire valuation (appraisal) process, and the course concludes with specific coverage of residential neighborhood analysis and property analysis, two of the most important preliminary steps in the appraisal process. Prerequisite: BUS 296 or Equivalent.

BUS-171 Valuation Principles and Procedures (3-0-3)

This course focuses on the procedures (methodology) used to develop an estimate of property value and how the various principles of value relate to the application of such procedures. Emphasis is on appraisal of residential 1 to 4 unit properties and small farms; however, all the concepts and procedures covered are applicable to the appraisal of all types of properties. The course begins with a review of the appraisal process and proceeds into thorough coverage of the sales comparison approach, followed by site valuation methods used to appraise residential 1 to 4 unit properties. The cost approach is then covered in depth. The basic concepts and methodology associated with the income approach are covered, with emphasis on direct capitalization using an overall rate and the gross rent multiplier technique. Finally, the student is introduced to the process of reconciling property value estimates obtained through application of the approaches to value. Prerequisite: BUS 170.

BUS-172 Applied Residential Property Valuation (3-0-3)

This course covers laws, rules and standards that must be followed by appraisers and focuses on the application of principles and procedures to the appraisal of residential 1 to 4 unit properties and small farms. The student is first acquainted with federal laws/regulations applicable to appraisers and the provisions of the North Carolina Real Estate Appraisers Act and related Commission Rules. Next comes coverage of the Uniform Standards of Professional Appraisal Practice (which are part of the Commission's Rules), followed by coverage of appraisal reports, with emphasis on standard report forms. The student then participates in a comprehensive case study of an appraisal of a single-family house using the URAR form. Instruction is then provided on various special considerations in appraising other types of residential 1 to 4 unit properties and in appraising farms. Finally, the student is introduced to appraising special (partial) property interests and to condemnation appraisals. Prerequisite: BUS 171.

BUS-200 Purchasing**(4-0-4)**

An introduction to the purchasing function focused on a manufacturing environment. Areas of concentration will include purchasing's relation and responsibility within the organization, department organization and ethics, vendor development and relations, and the legal aspects of procurement. The primary goal of procuring quality material and services at the best price when it is needed will be emphasized. Prerequisite: None.

BUS-206 Banking and Finance Credit**(3-2-4)**

The techniques of installment lending are presented. Emphasis is placed on establishing the credit, obtaining and checking information, servicing and loan, and collecting the amounts due. Other topics discussed are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending. Prerequisite: BUS 121.

BUS-208 Financial Statements Analysis**(5-0-5)**

A study of analytical procedures utilized in evaluating solvency and profitability of business. Horizontal and vertical analysis of comparative statements are examined in the light of general economic conditions and conditions unique to the businesses being evaluated. Prerequisites: BUS 122 and BUS 123.

BUS-209 Real Estate Finance**(3-0-3)**

This course is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses necessary to qualify for the State Board Broker's Exam. Prerequisite: BUS 296.

BUS-222 Control Accounting**(3-2-4)**

An introductory study of accounting for departmental operations, cost systems, and budgetary controls. This course is for the non-accounting student. The student will gain an understanding of basic decentralized operations, absorption of costs, and the nature and objectives of standards and budgeting. Prerequisite: BUS 121.

BUS-223 Intermediate Accounting I**(5-0-5)**

Study of the conceptual framework underlying financial accounting, financial statements, time value of money, and current assets. Prerequisite: BUS 122.

BUS-224 Intermediate Accounting II**(3-2-4)**

Study of financial accounting, including fixed and other assets, liabilities, stockholders' equity, dilutive securities, earnings per share, and cash flows. Prerequisite: BUS 223.

BUS-225 Cost Accounting I**(5-0-5)**

Nature and purpose of cost accounting, accounting for direct labor, materials, and factory overhead; for job order and process cost systems. Prerequisite: BUS 121.

BUS-226 Cost Accounting II**(3-2-4)**

A study of standard cost procedures; selling, administrative and distribution costs; budgeting and management use of cost data. Prerequisite: BUS 225.

BUS-229 Taxes I**(3-2-4)**

A study of federal and state personal income taxes. Prerequisite: BUS 121.

BUS-230 Taxes II**(3-2-4)**

A study of federal and state partnership and corporate income taxes. Prerequisite: BUS 229.

BUS-233 Personnel Management and Supervision (3-0-3)

This course presents the fundamental principles and successful practices in the organization and supervision of employees. A study of critically important and practical concepts of modern day supervision is presented. Results of modern social-psychological research and case studies are employed to demonstrate and emphasize leadership and motivation in the job situation. Prerequisite: None.

BUS-234 Introduction to Management (3-2-4)

The student is given a thorough introduction to basic theories of management and techniques of applying these in a real situation. Prerequisite: None.

BUS-235 Business Organization & Management (3-2-4)

Principles of business organization, administration and management covering management theory including planning, staffing, controlling, coordinating, directing, financing, and budgeting. An overview of developing and engineering the product, methods analysis and control, principles and administration of industrial relations and financing controls as interrelated functions of management are stressed. Prerequisite: BUS 101 or BUS 234.

BUS-236 Small Business Management (3-0-3)

A study of the principles of management as they relate to small businesses. The problems of small businesses will be stressed along with the possible solutions and how to alleviate the most common causes of business failures. Prerequisite: None.

BUS-237 Advertising (5-0-5)

A study of the importance and the role of advertising as it relates to the business sector. The techniques of advertising and display will be illustrated and demonstrated. Prerequisite: BUS 239.

BUS-238 Consumer Behavior (5-0-5)

An examination of motivational and behavioral approaches to understanding consumer behavior in buying goods and services and the business-management problems relating to buyer decisions. Prerequisite: BUS 239.

BUS-239 Introduction to Marketing (3-2-4)

A general survey of the field of marketing, with a detailed study of the function, policies, and institutions involved in the marketing process. Prerequisite: None.

BUS-241 Retailing (3-0-3)

A study of the role of retailing in the economy including development of and changes occurring in the retail structure, functions performed including merchandise controls and inventory records, principles governing effective operation and managerial problems resulting from current economic and social trends. Prerequisite: BUS 239.

BUS-243 International Marketing (3-0-3)

Focus is on the framework in which international marketing is conducted. Influence of international institutions, culture, stage of economic development, geographic, and demography are covered. Emphasis on multinational marketing problems and opportunities in our world. Prerequisite: BUS 239.

BUS-247 Insurance (5-0-5)

A presentation of the basic principles of risk insurance and their application. A survey of the various types of insurance is included. Prerequisite: BUS 114 or HRM 207.

BUS-248 Marketing Research (3-2-4)

A study of the role of Marketing Research in the American economy to include techniques for maximizing performance within marketing channels. Prerequisite: BUS 239.

BUS-249 Inventory Control (3-0-3)

A study of acquisition, control and distribution of inventories to include: ordering, control, and distribution techniques which may prove profitable in a marketing venture. Prerequisite: BUS 121.

BUS-266 Professional Sales Techniques (3-2-4)

Focus is on the fundamentals and techniques of salesmanship. Emphasis will be placed on sales prospecting, sales strategies, sales presentations, closing techniques, and handling objections. Prerequisite: BUS 239.

BUS-269 Auditing (5-0-5)

Principles of conducting audits both internal and external, with special emphasis on the control and safeguarding of assets and properly recording liabilities. Prerequisite: BUS 224.

BUS-270 Introduction to Income Property Appraisal (3-0-3)

This course introduces concepts and techniques used to appraise real estate income properties. It begins with a discussion of underlying economic principles and motivations for investing in income property. The appraisal process is then reviewed with emphasis on income property. This is followed by a discussion of real estate market analysis, property analysis, and site valuation. Mathematical and statistical concepts used in the appraisal of income property are covered next followed by coverage of how to use financial tables and/or financial calculators to solve a variety of problems associated with analysis of real estate income properties, including present value, loan calculations, estimation of net operating income, and estimation of before tax cash flow. Next, students learn how to estimate the value of a real estate income property by using a gross income multiplier and by direct capitalization with an overall rate. Finally, students are introduced to other capitalization rates. Prerequisite: BUS 172 and Proficiency Test in Math of Finance.

BUS-271 Advanced Income Capitalization Procedures (3-0-3)

This course reviews and then expands on the concepts introduced in BUS 270. The direct capitalization techniques introduced previously are expanded to include various band of investment and residual techniques used in income property appraisal. This is followed by a thorough discussion of the concepts of yield rates and of discounted cash flow analysis (yield capitalization), which is the primary focus of this course. Financial leverage is also discussed so students better understand the relationship between various yield rates and capitalization rates. Several traditional yield capitalization formulas including Inwood, Hoskold, Ellwood and Akerson are then discussed. Although rendered obsolete by the advent of financial calculators, these formulas are still used by many appraisers; and students should be familiar with them. A financial calculator is required for this course. Prerequisite: BUS 270.

BUS-272 Applied Income Property Valuation (3-0-3)

This course covers laws, rules and standards that must be followed by appraisers and focuses on the application of principles and practices to the appraisal of income properties. The course begins with a review of federal laws/regulations applicable to appraisers, followed by coverage of the North Carolina Real Estate Appraisers Act and related Commission Rules, and coverage of the Uniform Standards of Professional Appraisal Practice (which are part of the Commissioner's Rules). Preparation of narrative appraisal reports is then covered, with students also being introduced to the Uniform Commercial and Industrial Appraisal Report (UCIAR) form. Coverage then shifts to appraising leased income properties, with emphasis on

the effect of various lease provisions on the value estimate. The student then participates in highest and best use case studies, followed by case studies of appraisals of various types of existing income properties, which is the major focus of the course. The course concludes by covering considerations in appraising various development projects. Prerequisite: BUS 271.

BUS-296 Real Estate Fundamentals for Salespersons (6-0-6)

An introductory-level course in real estate practices and principles, basic real estate law, finance, construction, and the role of government in real estate. This course is designed to provide the student with the information necessary to qualify for the "North Carolina Real Estate Salesman's Exam." Prerequisite: None.

BUS-1103 Small Business Operations (3-0-0-3)

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations. Prerequisite: None.

Residential Carpentry

CAR-1101 Carpentry I (5-0-6-7)

This course will be presented as an introduction to the first steps in the site analysis and site preparation. Foundation layout and estimates of needed materials will be taught. Overall planning of job will be presented for consideration. Size, identification, and proper use of nails will be studied. Prerequisite or Corequisite: BPR 1107.

CAR-1102 Cabinetmaking I (5-0-15-10)

This course is designed to introduce the student to hand and power tools used in a cabinet shop. Various projects will be undertaken to develop the student's skills in the use of these tools. Identification and use of domestic woods will be stressed. Use of proper fasteners is studied. Prerequisite or Corequisite: BPR 1107.

CAR-1103 Carpentry II (6-0-15-11)

In this course the student will study several types of roof construction. Each student will be required to layout, cut and assemble rafters and trusses. Students will study the rafter square in order to calculate the lengths and cuts of rafters and truss parts. Stair layout and construction will be considered in detail. Prerequisite: CAR 1101.

CAR-1104 Cabinetmaking II (0-0-9-3)

Cabinet layout and details are stressed. Installation of cabinets and built-ins is presented. Uses of plastic laminates will be taught. Prerequisite: CAR 1102.

CAR-1105 Advanced Carpentry Projects (2-0-24-10)

Live projects will acquaint the student with "hands-on" experience in framing and finish work. Quality workmanship will be emphasized. Each student will be given the opportunity to gain expertise in the use of carpentry tools. Prerequisites: CAR 1101 and CAR 1103.

Computer Applications Software

CAS-101 Introduction to Computing Concepts (2-2-3)

This topically-based course is intended to help students use computers to become more productive in their personal, educational, and professional activities. Students will receive a basic-level introduction to the common elements of a microcomputer system including system components, DOS, Windows, and common application software packages for word processing, spreadsheet modeling, and database management. Prerequisite: None. Basic typewriting or keyboarding skill is highly recommended.

CAS-104 Introduction to Business Data Processing (2-2-3)

Fundamental concepts and operational principles of business information systems are presented. This course is designed to introduce students to microcomputer hardware and software concepts and applications. The goal of this survey course is computer literacy with an emphasis upon gaining experience using DOS, Windows user environment, and application software packages. Prerequisite: AOT 100 or Computer Keyboarding proficiency.

CAS-110 Computers and Information Processing (2-2-3)

This course provides an overview of computers and information processing. Hardware technology, software and data management will be covered. Basic and intermediate word processing functions and techniques will be emphasized. Prerequisite: AOT 100 or Computer Keyboarding proficiency.

CAS-118 Database Management Concepts (3-2-4)

A presentation of database concepts in a business information systems environment. Provides the student with an extended study of database construction, reporting, inquiring, linking and programming using microcomputers and a popular database package. Prerequisite: CAS 104 or CAS 110.

CAS-200 Microcomputer Spreadsheet Applications (2-2-3)

This course is designed to assist students in using the microcomputer and a popular spreadsheet package to communicate, analyze and solve complex business problems. Provides in-depth coverage and application of spreadsheet functions. Prerequisite: CAS 104 or CAS 110.

CAS-202 Microcomputer Configuration and Management (2-2-3)

An introduction to the physical organization of the microcomputer. This course will provide the student with practical troubleshooting knowledge. Topics to be covered will include system components, architecture, memory organization, data storage, input/output control and system maintenance. Prerequisite: CSC 107.

CAS-203 Data Communications and Networking (2-2-3)

This course provides the student with an introduction to data communication techniques and applications. The material covered includes a brief history of data communications, various media, software, hardware and standards used in the transmission of data. Prerequisite: CAS 104 or CAS 110.

CAS-204 Network Operations (2-2-3)

A study of the fundamentals of network operations. Topics include developing, implementing, administering and maintaining local area networks (LANs) and wide-area networks (WANs). Prerequisite: CAS 203.

CAS-220 Systems Analysis and Design (2-3-3)

In addition to learning theoretical concepts, students study an existing data processing system and make recommendations for improvement, or design a new system. The tasks include analysis of the flow of data from its point of origin through all stages of the software development life cycle. Prerequisite: CSC 115.

CAS-221 Advanced Projects (2-3-3)

This course is designed to provide the student with experience in programming techniques for advanced problem solving. Students will utilize skills and techniques acquired in previous computer courses to implement an integrated programming application. Prerequisite: CAS 220. Corequisites: CAS 225 and ENG 103.

CAS-225 Workplace Issues for the Computer Professional (3-0-3)

This course will provide the student with issues that are relevant to being a computer professional. Topics discussed include: user support, user/employee relations, employee/employer relations, personal development, job search, work ethics, computer ethics and professional certification. Prerequisite: CAS 220. Corequisites: CAS 221 and ENG 103.

Chemistry

CHM-100 Introduction to Chemistry (3-3-4)

An introductory course in chemistry suitable as a preparatory course for CHM 101 and CHM 200. Basic concepts, terminology, and mathematical skills are emphasized. Prerequisite: None.

CHM-101 Fundamentals of Physiological Chemistry (3-2-4)

Emphasis is placed on physiological aspects of inorganic chemistry, organic chemistry, and biochemistry. Theoretic topics are dealt with briefly as an aid to understanding bodily processes. Prerequisite: CHM 100 or High School Chemistry.

CHM-102 Engineering Chemistry (2-2-3)

Chemical principles related to the Engineering Technology student will be emphasized. This includes the chemistry of elements and compounds and their relationship to the engineering field. Matter, energy, chemical reactions, water and air pollution are also included. Prerequisite: None.

CHM-150 World of Chemistry I (3-2-4)

A three course sequence designed to meet the science requirement for the Associate in Arts major. The sequence is a unified view of the science and practice of chemistry. It stresses a humanistic approach to the discipline and de-emphasizes mathematical problem solving. After an introduction, the course investigates dyes and color, measurement, the atom, the periodic table and chemical bonds. Prerequisite: None.

CHM-151 World of Chemistry II (3-2-4)

A continuation of CHM 150 investigating matter and spectroscopy, the mole concept, water chemistry, Kinetics, chemical reactions, the electron, and the proton. Prerequisite: CHM 150.

CHM-152 World of Chemistry III (3-2-4)

A continuation of CHM 151 that studies the atmosphere, chemistry of the earth, metals, surface chemistry, carbon chemistry, polymers, proteins, genetic code, and the environment. Prerequisite: CHM 151.

CHM-200 Principles of Chemistry I**(3-3-4)**

Introduction to matter and energy, the scientific method, dimensional analysis, metric system of measurements, atomic theory, the mole, molarity, formulas, equations, stoichiometry, ideal gas law, kinetic theory of gases, and quantum theory. Prerequisite: High School Chemistry or CHM 100. Corequisite: MAT 101 or MAT 106.

CHM-201 Principles of Chemistry II**(3-3-4)**

A continuation of CHM 200. Periodic law, chemical reactions, thermochemistry (enthalpy), chemical bonding, molecular structure, VSEPR, liquids and solids, intermolecular forces, solutions, colligative properties, net ionic and oxidation-reduction equations. Prerequisite: CHM 200. Corequisite: MAT 102.

CHM-202 Principles of Chemistry III**(3-3-4)**

A continuation of a CHM 201. Chemical equilibrium: K_c , K_p , K_a , K_b , and K_{sp} . Solution stoichiometry, volumetric analysis, acid-base concepts, ionic equilibria of weak electrolytes, buffers, chemical kinetics, spontaneity of reaction ΔS and ΔG , and an introduction to organic chemistry. Prerequisite: CHM 201.

CHM-205 Survey of Organic and Biochemistry**(5-2-6)**

Survey of the major functional classes of compounds in organic and biochemistry, including structure and nomenclature, chemical and physical properties and common uses. Emphasis is placed on physiological aspects with an introduction to metabolism. Prerequisite: CHM 201.

CHM-210 Organic Chemistry I**(3-3-4)**

Organic nomenclature, structures and properties, energy of activation, reaction rates, free radical mechanism, substitution reactions, stereochemistry. Elimination reactions. Prerequisite: CHM 202.

CHM-211 Organic Chemistry II**(3-3-4)**

Electrophilic and free radical addition to alkanes, stereospecific reactions, conjugation and resonance, alkynes and alicyclic hydrocarbons, aromatic hydrocarbons and electrophilic substitutions. Prerequisite: CHM 210.

CHM-212 Organic Chemistry III**(3-3-4)**

Spectroscopy and structure, functional group studies of alcohols, ethers, epoxides, aldehydes, ketones, carboxylic acids, amines, and phenols. Introduction to molecular orbital theory and biomolecules. Prerequisite: CHM 211.

CHM-215 Principles of Biochemistry**(4-0-4)**

Introduction to structures and properties of amino acids, peptides, proteins, carbohydrates, lipids, and nucleic acids. Principles of metabolism. Prerequisite: CHM 212.

CHM 220 Instrumental Analysis**(2-4-4)**

A laboratory course designed to study selected modern instrumental methods of analysis; Topics include theory, interpretation of chemical data using statistical evaluation and practical applications. Laboratory instruments and techniques include UV-visible, atomic absorption, and infrared spectroscopy; thin layer, column and gas chromatography; potentiometric and conductometric titrations. Prerequisite: CHM 211.

Civil Engineering Technology

CIV-101 Calculator Operation for Engineering Problems (1-2-2)

Engineering and surveying problem solving with scientific calculator. Prerequisite: None.

CIV-114 Statics (2-4-4)

Forces, and types of force systems; moments and couples; equilibrium of force systems by analytical methods; and static friction. Prerequisites: MAT 102 and PHY 111.

CIV-202 Properties of Soils (2-2-3)

Study of soil types and their physical properties; mechanical analysis; classification of soils; hydrostatics of ground water. Methods of compaction and consolidation. Prerequisite: None.

CIV-216 Strength of Materials (2-4-4)

Fundamental stress and strain relationship; centroids and moments of inertia; torsion, shear and bending moments; stresses and deflection in beams; columns and combined stresses; analysis of connections. Prerequisite: CIV 114.

CIV-217 Introduction to Construction Technology (2-0-6-4)

Construction practices and terminology for the construction industry. Includes visits to construction, surveying, and engineering projects. Prerequisite or Corequisite: MAT 101.

CIV-218 Properties of Plain Portland Concrete (2-2-3)

Study and testing of the composition and properties of portland concrete including cementing agents, aggregates, admixtures, and air-entertainment; design and proportioning of concrete mixes to obtain pre-determined strengths and properties; methods of placing, consolidating and curing concrete; standard control tests of concrete. Prerequisite: None.

CIV-219 Steel and Timber Construction (2-4-4)

Analysis and basic design of steel beams, tension members, columns, and (riveted, high strength bolted and welded) connections; study of plate girders, industrial building roofs, continuous spans, lightweight steel construction; use of American Institute of Steel Construction Manual. Design of timber members and their connections. Prerequisite: CIV 216.

CIV-220 Project Planning (2-2-3)

Construction management, plant and job layout, project control and supervision, scheduling, time and motion studies, and particularly the use of critical path planning techniques and other similar techniques. Prerequisite: CIV 217.

CIV-221 Asphalt (2-2-3)

Study and testing of asphaltic materials, asphalt pavements, and surface treatments. Study will include properties, testing, production, laydown, and design of asphalt. Prerequisite: None.

CIV-223 Codes, Contracts, and Specifications (2-2-3)

Basic principles and methods in contract relationships; national, state, and local building codes; specifications for different orders of surveying work; specification writing. Prerequisites: CIV 217 and SUR 101.

CIV-224 Reinforced Portland Concrete (2-2-3)

Analysis and design of reinforced concrete structural members; principles of prestressed and precast concrete. Prerequisites: CIV 216 and CIV 218.

CIV-225 Construction Estimating (2-4-4)

Interpretation of working drawings and specifications for construction projects involving timber, steel, masonry, and concrete structures. Both building and roadway structures are taken completely through the building procedure from preliminary survey to final bid and beyond. Prerequisites: CIV 202, CIV 218, CIV 221, DFT 104, and SUR 102. Corequisite: CIV 223.

CIV-228 Relations and Ethics (1-2-2)

Study of ethical codes and their application to business relations with employer, employees, clients, technicians, and others. Class discussions of situations involving relations and ethical responses. Prerequisite: Senior Status.

CIV-230 Hydraulics (2-2-3)

A basic study of closed conduit and open channel flow. Conservation of energy. Prerequisite: MAT 101.

CIV-231 Hydrology (2-2-3)

The principles of Hydrology and resulting drainage. Sedimentation control. Prerequisite: None.

CIV-232 Water and Waste Treatment (2-2-3)

Study of public water sources and methods of treatment for a potable system; methods of waste water treatment; solid waste handling and treatment including incineration, landfilling, and recycling. Prerequisite: CHM 102.

Business Computer Programming

CSC-107 Operating Systems (3-2-4)

This course is designed to provide the business computer programming student with a working knowledge of computer system software including Windows and MS-DOS. System resource management will be covered. Prerequisite: None.

CSC-115 Program Design and Development (3-2-4)

This course is designed to provide the student with the fundamentals of designing and developing computer programs. Topics include: program logic, syntax and structure, use of modular design, input and output, data formatting and file organization. Applications will be developed using an introductory level programming language. Prerequisite: Completion of all Math courses below MAT 101.

CSC-215 COBOL Programming I (2-2-3)

This course introduces the student to writing structured programs to solve business problems using COBOL. Topics include syntax, report generations, interactive computing and data validation. Programming methodologies are integrated into assignments. Prerequisites: BUS 121, CSC 107, and CSC 115.

CSC-216 COBOL Programming II (2-2-3)

This is a continuation of CSC 215. Advanced COBOL concepts will be covered. Topics include multilevel control breaks, table handling, sorting files, and file maintenance. Advanced programming methodologies are integrated into assignments. Prerequisite: CSC 215.

CSC-218 RPG Programming I (2-2-3)

This course provides the student with an introduction to Report Program Generator coding which includes preparation of file descriptions, file extensions, input, calculation and output specifications. An introduction to the basic operations of the AS/400 minicomputer will be presented. The AS/400 and RPG will be used to develop appropriate business application programs. Prerequisites: BUS 121 and CSC 115.

CSC-219 RPG Programming II (2-2-3)

This course is a continuation of CSC-218. It is dedicated entirely to using RPG and the AS/400. File processing (sequential and indexed) and management, and on-line inquiries and updates will be covered. Advanced programming and AS/400 operations will be integrated into assignments. Prerequisite: CSC 218.

CSC-222 C Programming (2-2-3)

Upon completion of this course the student will be able to write programs in the C language using structured logic and design. Topical coverage will include the C programming environment, arrays, pointers, user-defined functions, data types, operators, input, output, library functions, debugging, testing, and documentation. Prerequisite: CSC 115.

CSC-223 Advanced C Programming (2-2-3)

This advanced programming course will provide the student with experience in writing advanced C programs. Topics will include objects, classes, inheritance and polymorphism. Prerequisite: CSC 222.

Culinary Technology

CSP-101 Food Preparation I (2-0-9-5)

This course is designed to give the student a working knowledge of the culinary profession, including the classical stations, vocabulary, basic products and safety and usage of equipment. Emphasis is placed on sanitation, knife skills and basic cooking methods with concurrent demonstrations and laboratory experiences utilizing these elements in salad and vegetable preparations. The student will also experience cafeteria service. Prerequisite: None.

CSP-102 HRM Food Preparation II (3-0-6-5)

This course provides an introduction to the basic concepts of soups and stocks. The principles and techniques of egg cookery and hot and cold appetizers will also be emphasized. Lectures and demonstrations will be followed by a practical laboratory experience. A la Carte production service will allow the students to develop beginning dining room, cashing and organizational skills. Prerequisite: CSP 101 and CSP 107.

CSP-103 Food Preparation II (2-2-9-6)

This course provides an introduction to the basic concepts of stocks and soups and the appropriate thickening agents. The principles and techniques of egg cookery and hot and cold appetizers will also be stressed. Lectures and demonstrations will be followed by a laboratory experience. The student will also participate in an a la carte production service. Prerequisite: CSP 101, CSP 107, and HRM 213.

CSP-104 HRM Food Preparation III (3-0-6-5)

Emphasis is on the preparation of Entrees. Theory and application via a practical laboratory experience of meat, poultry and seafood cookery with appropriate related sauces and compound butters are addressed. Production classes will involve the students in set-up, ambiance, organization, and service of American Regional/International Buffets. Prerequisite: CSP 102.

CSP-105 Baking I (2-2-0-3)

An introductory course to the practical procedures and techniques of baking and pastry. Emphasis is on the basic functions of ingredients, exact weights and measures, handling and use of assorted yeast doughs, folded doughs, batters, basic cakes, tarts and creams. Prerequisite: CSP 101.

CSP-107 Food Service Equipment (1-2-0-2)

This course is to familiarize the student in the operation and safe handling of every major piece of mechanical equipment in the kitchen of the college lab. An opportunity will be given to learn the inner workings of each piece of kitchen equipment, to break it down for cleaning, and to subsequently restructure into its functional entity. Functions, uses, operating techniques and safety devices of each piece of equipment will be stressed. In addition, equipment purchasing, specifications, and ergonomics will be addressed. Prerequisite: None.

CSP-108 Food Preparation III (1-0-9-4)

This course focuses on the theory, application and preparation of entrees. An introduction to classical and modern sauces and their relationship to meat, poultry and seafood is emphasized. Weekly participation in American regional/international buffets enhances students' culinary skills. Prerequisite: CSP 103.

CSP-109 International Cuisine (2-2-0-3)

A research course that will attempt to discover, isolate, and trace to their sources, the factors that distinguish and identify five of the most important international cuisines. The student will leave with a working culinary vocabulary from these major culinary traditions. Prerequisite: None.

***CSP-110 Supervised Work Experience (0-0-40-4)**

A supervised practical training experience providing the student with the opportunity to work in the culinary industry and to apply and enhance the skills and methodologies of the professional culinarian. Prerequisite: Successful completion of major courses through the third quarter or departmental approval.

CSP-112 Baking II (1-0-3-2)

The concentration of this course is on advanced baking and pastry techniques including the preparation and plate presentations of modern and classical desserts, chocolate work, cake decorating, and showpieces. Prerequisite: CSP 105.

CSP-114 Gardemanger (2-0-3-3)

The student is introduced to basic gardemanger principles with emphasis placed on the preparation and aesthetic presentation of cold food entrees, pates, galantines, mousses, charcuterie, ice carving, tallow, aspics, and cold sauces. In addition, methods of the artistic display of showpieces/centerpieces and buffet layout and design are examined and experienced in a practical laboratory classroom. Prerequisite: First Year Curriculum or Department Approval.

CSP-201 Food Preparation IV (3-0-9-6)

This course is designed to give the student a working knowledge of advanced culinary preparations, concurrent with the dining room experience. Increased levels of culinary skills and methods will be emphasized in the preparation of classical appetizers, soups, entrees, salads, and desserts. The students' skills will be further enhanced by supervising and preparing for the production of cafeteria and buffet service. Prerequisites: First Year Curriculum and CSP 110. Co-requisite: CSP 203.

CSP-203 Dining Room (1-2-0-2)

A study of the principles of dining room service, emphasizing the choices in technique offered by American, French, and Russian styles of service. After mastery of service basics, students will be introduced to advanced techniques of table service, and will have an opportunity to practice the art of wine presentation. All students will have an opportunity to design, organize, and perform the service for a formal multi-course meal. Prerequisite: First Year Curriculum. Corequisite: CSP 201.

CSP-210 Food Preparation V (3-0-9-6)

The student will investigate the development of traditional American regional cuisine: cultural influences, trends, cooking methods, and indigenous ingredients. Through the American regional laboratory experience and a la carte production service increased levels of culinary competencies will be stressed. Prerequisite: First Year Curriculum, CSP 114, and CSP 201.

CSP-212 Food Preparation VI (1-0-9-4)

This course prepares students for entry level employment by encompassing all aspects of culinary arts and management. In food production labs the students are encouraged to develop their individualized style as they prepare for their final seven-course meal. Weekly participation in American regional/international buffets enhances students' culinary and management skills. Prerequisite: CSP 210.

CSP-214 Wine Appreciation (0-2-0-1)

This course provides the student with comprehensive and detailed information about wine from all the major wine producing countries. The history of wine, production, characteristics, laws, and purchasing and storing requirements serve as the core of the course. Wine tasting allows the student to determine what wines compliment various dishes in addition to supporting the information received in the classroom. Prerequisite: First Year Curriculum or Departmental Approval.

CSP-215 Classical Food Preparation (2-0-3-3)

This course focuses on increased levels of competency for performance of culinary skills. Emphasis is on classical and innovative preparations achieved by the means of butchering seafood, poultry, and primal meat cuts, the usage of appropriate cooking methods and techniques, and student selected complimentary enhancements. Prerequisite: CSP 114 and CSP 201.

Skills for College Success

CSS-090 College Success Skills (2-0-0-2)

This course is designed to increase student success in college by assisting students in obtaining skills necessary to reach educational objectives. Topics include time planning, test taking, communications skills, study techniques, question-asking skills, and personal issues that face many college students. Prerequisite: None.

Dental Assisting

DEN-1103 Dental Materials I**(2-4-0-4)**

A study of physical and chemical properties and origin of dental materials, including the manufacturing process of specific materials. Laboratory exercises are designed to develop skills in manipulation and in understanding the application of the materials to dental procedures. Emphasis is on gypsum products, impression materials, polymers, and amalgam alloys. Prerequisite: None.

DEN-1120 Clinical Science I**(3-6-0-6)**

A study of principles and techniques for pre-operative procedures; the recognition, maintenance and use of basic dental instruments and equipment; and the basic skills of four/six-handed dentistry. Initial development of a professional vocabulary and demonstration of professional behaviors is encouraged. Prerequisite: None.

DEN-1122 Dental Materials II**(2-2-0-3)**

A continuation of Dental Materials I, with emphasis on mastery of the manipulation of various materials, e.g. cavity varnishes and liners, dental cements, waxes, dressings, and casting gold alloys. Prerequisite: DEN 1103.

DEN-1123 Oral Health Education**(2-4-0-4)**

This course provides an introduction to information and techniques for prevention and control of dental caries and periodontal disease, emphasizing the dental assistant's role in oral health education. Opportunities are provided for students to implement nutritional counseling, fluoride application, plaque scoring, oral physiotherapy instruction and education groups in the community. Prerequisites: DEN 1120 and DHY 101.

DEN-1125 Dental Affiliation I**(1-0-12-5)**

A clinical practice learning experience for competency development in performing dental assisting duties in dental offices and clinics. Clinical practice, primarily in general dentistry, will include chairside assisting techniques, and clinical support procedures. Prerequisite: All First and Second Quarter Courses.

DEN -1126 Dental Sciences**(5-0-0-5)**

A study of embryology and histology, basic principles of general and oral pathology and the prescription and administration of drugs commonly used in dentistry. Prerequisites: BIO 1109 and DHY 101.

DEN-1130 Clinical Science II**(3-2-3-5)**

A clinical science course to increase skill competency levels in operative dentistry. Major emphasis is given to principles and procedures of the dental specialties, including endodontics, periodontics, orthodontics, prosthodontics, pedodontics, oral surgery, and public health dentistry. Prerequisite: DEN 1120.

DEN-1131 Dental Office Management**(3-2-0-4)**

Principles and procedures related to dental office management. Fundamentals of accounting, filing insurance and financial management are applied to dental office procedures. Opportunity for competency development in preparing, processing, maintaining and storing records; communications; scheduling appointments; inventory control and patient management. Prerequisites: DEN 1120 and DEN 1130.

DEN-1135 Dental Affiliation II**(1-0-18-7)**

A clinical practice learning experience to increase dental assisting skills to job-entry level competency. Clinical assignments in various dental specialty practices, as well as general dentistry practices, will provide opportunities for advanced skill development in chairside assisting techniques, clinical support and business office procedures. Prerequisite: All First, Second, and Third Quarter Courses.

DEN-1141 Professional Development**(2-0-0-2)**

Designed to prepare the student for employment as a dental assistant. Ethical, legal and personal responsibilities; testing and certification requirements; career opportunities; resumes and interviewing techniques. Prerequisite: All First, Second, and Third Quarter Courses.

Drafting and Design Engineering Technology

DFT-101 Drafting I**(2-4-4)**

Introduction to field of drafting; lettering; use of instruments; geometric constructions; orthographic projection theory, sketching; reading and instrument drawing; basic pictorial drawings; introduction to dimensions and notes; and reproduction process. Prerequisite: None.

DFT-102 Drafting II**(2-4-4)**

Auxiliary views; sections, and conventions; dimensioning and shop notes for detail drawings; introduction of working drawings; screw threads, fasteners, keys, and springs; and simple assembly drawings. Prerequisite: DFT 101.

DFT-103 Drafting III*(2-4-4)**

The study of precision dimensioning; preparation of set of working drawings; assembly drawings, detail drawings, and part lists; surface quality (finish); and weldments and symbols. Prerequisites: DFT 102 and MAT 101.

DFT-104 Civil Drafting**(2-4-4)**

Plats as required by law drawn in pencil and ink. Highway construction layouts and profiles, steel and wood structural drawings, topographical mapping and symbols. Prerequisites: DFT 110 and SUR 101.

DFT-110 Engineering Graphics**(2-4-4)**

An introductory course that is designed to develop a basic proficiency in the use of instruments, lettering, multiview projection, pictorial drawing, sections, auxiliaries, dimensioning, simple fasteners, and working drawings. Emphasis is placed on graphic representation as a universal technical language. Prerequisite: None.

DFT-150 Computer-Aided Drafting for CNC Operations**(1-6-0-3)**

Introduction to Computer Aided Drafting with related problems and exercises designed to give students an understanding of a computer graphics work station as a drafting tool. The students will develop CAD drawings to be stored in DXF files to be used with CAM software. Prerequisite: DFT 110 or BPR 1104, 1105, and 1106 combined.

DFT-201 Design Drafting I (2-6-4)

Structural steel layout and detailing; application of structural shapes; fluid distribution; selection of pipe, tubing and fittings, single line piping diagrams and two line piping drawings; electronic and electrical symbols; and single line, schematic, and wiring diagrams. Emphasis will be placed on use of catalog and manuals related to the above areas of study. Inking technique and use of special drafting media will be applied where appropriate. Prerequisite: DFT 103.

DFT-204 Descriptive Geometry (1-6-3)

Points, edges, lines, planes, curved lines, curved surfaces, irregular surfaces, intersections, developments, auxiliary projections, revolutions, vectors, and practical design applications. Prerequisite: DFT 102.

***DFT-205 Design Drafting II (2-6-4)**

Charts and graphs, plats as required by law; topographical mapping and symbols. Design layouts and working drawings on a CAD system of gears, gear train drives, belt and pulley drives, and chain and sprocket drives. Prerequisite: DFT 103.

***DFT-206 Design Drafting III (2-6-4)**

Assignment of mechanical design projects requiring use of research; application of engineering principles; calculations; and use of various manuals, catalogs, and periodicals. Preliminary design sketches, layout drawings, detail drawings, subassembly drawings and assembly drawings done on a CAD system. Specifications, patent drawings, and simplified drafting practices will be required. Prerequisites: DFT 205, DFT 211, and DFT 220.

***DFT-211 Mechanisms and Kinematic Design (2-6-4)**

Introduction and definitions of kinematic terms; vectors; motion concepts; kinematic drawing; kinematic displacement, centros, velocities and accelerations of mechanisms; motion curves; displacement diagrams and cam layout; and practical problems, gear trains, cams, belts and pulleys, and chains and sprockets all done on a CAD system. Prerequisites: DFT 205, DFT 220, and PHY 111.

***DFT-220 Computer-Aided Drafting (1-6-3)**

Introduction to Computer Aided Drafting with related problems and exercises designed to give student an understanding of a computer graphics work station as a drafting tool. Student will interact a digitizer, CRT, printer and plotter to produce 2-D drawings and documentation. Prerequisites: DFT 102 or DFT 110 or Departmental Approval.

***DFT-221 Advanced Computer-Aided Drafting and Design (1-6-3)**

A continuation of DFT-220 Computer Aided Drafting. Student will continue to work with new commands and command structure. Problems and exercises will place emphasis on advanced 2D and introduction to 3D CAD. Prerequisite: DFT 220.

DFT-222 Computer-Aided Manufacturing (2-6-4)

Introduction to Computer Aided Manufacturing with related problems and exercises in manual and computer assisted CNC programming. Students will interact with a PC based computer, a CNC mill, and a CNC lathe to produce drawings, programs, and actual production parts. Students will gain an understanding of the principles underlying numerical controlled tool concepts with the use of CAD and CAM software. Prerequisites: DFT 220 and MAT 102.

***DFT-1126 Pattern Development and Layout (0-3-0-1)**

A study of methods used in layout of sheet steel. Special emphasis is placed on developing pipe and angle layouts by the use of patterns and templates. Prerequisite: BPR 1108.

***DFT-1127 Construction Trades Drafting I (2-2-0-3)**

Use of instruments; lettering; planning and preliminary sketches; dimensioning practice; and use of symbols and conventions will be utilized in the development of working drawings for a residence. Emphasis will be on preparation of floor plan and typical wall section. Prerequisite: BPR 1109.

***DFT-1128 Construction Drafting II (2-2-0-3)**

A continuation of DFT 1127 with emphasis placed on development of foundation plan, exterior elevations, sections and details found in set of working drawings for a residence. Prerequisite: DFT 1127.

DFT-1207 General Machine Drafting (2-4-0-4)

Use of instruments; lettering orthographic drawing, sections and primary auxiliary views; dimensioning; displacement, timing and motion diagrams; and cam layout. Prerequisite: BPR 1106.

***DFT-1209 Tool Design and Planning (2-4-0-4)**

This course will enable the student to plan the process of production and isolate the areas that must be tooled for production. Cost of tools, jig and fixtures, and gaging will be considered. Students will review available items from vendors and utilize standard bushing charts and other references. Typical tool design procedures will be employed and prints must reflect standard procedures. Prerequisite: DFT 1207.

Dental Hygiene

DHY-101 Head, Neck, and Oral Anatomy (3-4-0-5)

A study of the structures of the head, neck, and oral cavity. Emphasis will be placed on the anatomy and morphology of permanent and deciduous teeth and the anatomy of the head and neck areas as related to the practice of dental assisting or dental hygiene. Prerequisite: None.

DHY-103 Dental Radiology (3-4-0-5)

A study of the scientific principles of radiology, including biological effects of radiation exposure and radiation safety. Laboratory experience will include exposing, processing, mounting, and interpretation of dental radiographs. Prerequisite: DHY 101.

DHY-106 Oral Embryology and Histology (2-0-0-2)

A study of the oral histological development of the face and oral cavity, structures and functions of primary tissues, and the development of teeth and supportive tissues. Prerequisites: BIO 101 and DHY 101.

DHY-110 Preclinical Dental Hygiene I (3-6-0-6)

A study of principles and techniques for preoperative procedures and clinical dental hygiene procedures as well as development of a professional vocabulary. Initial development of a career philosophy and personal values for clinical dental hygiene practice are encouraged. Prerequisite: None.

DHY-111 Preclinical Dental Hygiene II (3-6-0-6)

Theories and techniques for prevention of dental disease, including etiology, detection, removal and prevention of dental deposits are studied and practiced. Patient assessment, education and evaluation emphasize the concept of total patient care in dental hygiene practice. Prerequisites: DHY 101 and DHY 110.

DHY 112 Dental Office Emergencies (3-0-0-3)

The study of the more common medical/dental emergencies. Attention will be directed toward prevention, preparedness, assessment, primary response including CPR, and accessing the Emergency Medical System, as necessary. Prerequisites: BIO 102 or BIO 1109, DHY 101, and DHY 111 or DEN 1120.

DHY-114 General and Oral Pathology (3-0-0-3)

The study of general and oral pathology and the nature of disease with emphasis on diseased conditions the dental hygienist may encounter in practice. Prerequisites: BIO 102, BIO 103, and DHY 106.

DHY-116 Dental Hygiene I (1-0-0-1)

A continuation of DHY 111 designed to prepare the student for clinical experience through the application of theory and skills. Prerequisite: DHY 111.

DHY-117 Dental Hygiene Clinic I (0-0-9-3)

The student provides direct patient care services for patients from the community in the dental hygiene clinic at a beginning level. Prerequisites: DHY 103 and DHY 111.

DHY-118 Dental Hygiene II (3-0-0-3)

In this course the student is introduced to the remaining psychomotor skills necessary to perform total patient care including management of the special patient. Prerequisites: DHY 116 and DHY 117.

DHY-119 Dental Hygiene Clinic II (0-0-12-4)

The student demonstrates increased levels of competency in the performance of traditional and supportive tasks in the dental hygiene clinic with patients from the community. Externships provide the student with enrichment experiences off campus. Prerequisites: DHY 116, DHY 117, and DHY 206.

DHY-203 Community Dental Health I (3-2-0-4)

A study of the principles and methods used in assessing, planning, implementing, and evaluating a dental health program. Prerequisites: PSY 101 and SOC 201.

DHY-205 Periodontology (3-0-0-3)

A study of the biological and clinical factors as they relate to periodontal disease. Prerequisite: DHY 114.

DHY-206 Dental Materials (3-4-0-5)

A study of the source and physical properties of materials used in dentistry. Manipulation of various materials is practiced with emphasis on the role of the hygienist when delivering direct patient care. Prerequisites: CHM 101 and DHY 101.

DHY-216 Dental Hygiene III (3-0-0-3)

A study of nutrition as it relates to the dental patient emphasizing the role of the dental hygienist concerning diet analysis, nutrition and foods contributing to dental health. Prerequisites: DHY 118 and DHY 119.

DHY-217 Dental Hygiene Clinic III (0-0-12-4)

This course focuses on increased levels of competency for performance of all required clinical skills. Emphasis is given to care of patients with periodontal disease. Prerequisites: DHY 118 and DHY 119.

DHY-218 Dental Hygiene IV (2-0-0-2)

This course encourages students to develop personal traits and skills which enhance their employability as a provider of oral care. Prerequisites: DHY 216 and DHY 217.

DHY-219 Dental Hygiene Clinic IV (0-0-15-5)

A continuation of DHY 217 with demonstration of increased levels of competency expected. Externships provide the student with enrichment experiences off campus. Prerequisites: DHY 216 and DHY 217.

DHY-221 Pharmacology (3-0-0-3)

A basic study of physical and chemical properties, dosages and therapeutic effects of drugs used in dentistry, and drugs which have clinical significance in management of routine and emergency dental patients. Prerequisites: BIO 102, CHM 101, DHY 112, and DHY 114.

DHY-222 Community Dental Health II (1-0-3-2)

A continuation in the study of dental public health and emphasis on assessing, planning, implementing, and evaluating a dental health program. Prerequisite: DHY 203.

DHY-223 Dental Ethics and Jurisprudence (3-0-0-3)

A study of the codes of the ethics and laws which govern the practice of dentistry and dental hygiene and their application to continual professional development. Prerequisites: DHY 218 and DHY 219.

DHY-224 Dental Hygiene Clinic V (0-0-15-5)

The treatment of an increased number of patients during each clinic session without sacrificing quality of care is emphasized. The student is expected to demonstrate exit level competencies for performance of all clinical dental hygiene practice tasks. Externships provide the student with enrichment experiences off campus. Prerequisites: DHY 218 and DHY 219.

Economics

ECO-102 Economics (3-0-3)

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large. Prerequisite: None.

ECO-105 Introduction to Economics (5-0-5)

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of laws of supply and demand and the principles bearing upon production, exchange, distribution, consumption, composition and pricing of national output, distribution of income, international trade and finance, and current economic problems. Prerequisite: None.

ECO-107 Consumer Economics (3-0-3)

Designed to help the student use his resources of time, energy, and money to get the most out of life. It gives the student an opportunity to build useful skills in buying, managing his finances, increasing his resources, and to understand better the economy in which he lives. Prerequisite: None.

ECO-108 Consumer Economics (5-0-5)

An in-depth study of consumer economics integrating the basics of consumer economics with the functional application of economics principles. Prerequisite: None.

ECO-1107 Consumer Economics**(3-0-0-3)**

The goal of this course is to meet the consumer needs of Vocational Education students by preparing them, according to their abilities and interests, to manage limited resources under changing economic conditions. Budgeting and the use of credit constitute major areas of concern. Prerequisite: None.

Early Childhood Associate

EDU-101 Introduction to Early Childhood Education: Child Care Credential I (3-0-0-3)

This course provides an introduction to the field of child care. Areas of study include introduction to the child care profession, child growth and development, and getting to know the whole child. Students are prepared for entry level employment as a teacher in a child care setting. This course gives the first half of instruction necessary to qualify for the N.C. Child Care Credential. Prerequisite: None.

EDU-102 Introduction to Early Childhood Education: Child Care Credential II (3-0-0-3)

This course completes the introduction to the field of child care begun in EDU 101. Areas of study include developmentally appropriate practices, positive guidance, and providing a safe and healthy environment. This course gives the final half of instruction necessary to qualify for the N.C. Child Care Credential. Prerequisite: EDU 101.

EDU-104 Creative Activities in Early Childhood**(4-2-0-5)**

The student will pursue a study of creative activities for children including art, music, movement, and dramatics. Teaching aids will be developed, and students will plan appropriate activities to incorporate into a development program for children. Prerequisite: None.

EDU-106 Health, Safety, and Nutrition in Early Childhood**(4-2-0-5)**

Students learn basic concepts in health, safety, and nutrition, and how these relate to young children. The course emphasizes prevention and identification of common childhood illnesses, diseases, and accidents. Effective care giver and child health/sanitation practices will be taught. Laboratory experiences enable students to plan menus and food experiences for young children. Prerequisite: None.

EDU-107 Communication in Early Childhood**(4-0-0-4)**

This course is designed to improve the verbal and nonverbal communication of students working with young children in the child care setting. Special emphasis is on developing awareness of body language communication, listening skills and modeling of the English language for small children. Prerequisite: None.

EDU-110 Exploration Activities in Early Childhood**(5-3-0-6)**

Students learn about basic science, math, and social studies concepts, facts, phenomena, and skills which young children think about, discover, and develop. This course prepares students to plan and implement developmentally appropriate science, math, and social studies experiences for young children aged 1-8. Prerequisite: None.

EDU-111 Working With Parents and Families**(3-0-0-3)**

This course will examine the status of the modern American family, roles undertaken by parents, and various methods of involving parents in a child's center/school setting. Students will develop skills in effective home/school communication, evaluate the purposes and value of home visitation programs, and discuss techniques of working with parents and families which contribute to optimum home-school linkage. Prerequisite: None.

EDU-112 Infant/Toddler Development and Activities (3-0-0-3)

This course emphasizes the skills needed to effectively implement group care for infant/toddlers. Topics include principles of child development and developmentally appropriate practices. Prerequisite: EDU 102 or Departmental Approval.

EDU-115 Child Development I (3-0-0-3)

The content of this course prepares the student to discuss developmental sequences of children from conception to age two. Students should be able to identify milestones in physical, social, emotional, cognitive, and language development. Prerequisite: None.

EDU-116 Child Development II (3-0-0-3)

Students will examine the developmental sequences of preschool-age children (3-5 years). Specific emphasis will be placed on factor influencing development in the physical/motor, cognitive/language and social/emotional areas. Prerequisite: None.

EDU-117 Child Development III (3-0-0-3)

This course will examine the growth and development of middle childhood and adolescence. Specific emphasis will be placed on factors influencing development in the physical/motor, cognitive/ language and social/emotional areas. Prerequisite: None.

EDU-121 Seminar Practicum--Child Care I (2-0-10-3)

This supervised practicum experience gives the student an opportunity to apply age-appropriate principles of child development, relationships and learning in a child care environment. The seminar gives them an opportunity to evaluate practical experiences and to discuss curriculum components. Prerequisite: EDU 102.

EDU-122 Seminar Practicum--Child Care II (2-0-10-3)

Students will demonstrate caregiving skills by facilitating classroom routines and transitions, managing classroom behavior, and meeting children's individual needs. They will also plan, conduct and evaluate educational experiences in the child care setting. Prerequisite: EDU 121.

EDU-200 Behavior Management (3-0-0-3)

This course presents guidelines for positive child guidance. Behavior management as an educational tool is studied. Students will explore strategies for guiding behavior using productive and positive techniques. Prerequisite: None.

EDU-201 Early Childhood Skill Development: Communications (5-0-0-5)

The student pursues a study of the importance of literacy, early literacy development, appropriate early experiences with books and writing. Use of learning materials and appropriate language experiences is emphasized. Prerequisite: None.

EDU-202 Children With Special Needs (3-0-0-3)

This course is designed to introduce students to the field of special education and to train them to identify special needs in children, to refer children to professional resource people, and to care for and teach children with special needs in a regular or special classroom setting. Students will learn causes, characteristics and appropriate intervention and interaction strategies, for each disability/exceptionality. This course will correlate with laboratory experiences in EDU 222, Seminar Practicum - Special Needs. Prerequisites: EDU 115, EDU 116, and EDU 117.

EDU-203 Early Childhood Curriculum Planning**(4-0-0-4)**

This course will focus on major elements of curriculum planning in early childhood education such as assessment of children, long-range instructional planning, various types of schedules, and use of commercial curriculum materials. Students will design indoor floor plans and playgrounds, list appropriate equipment, materials and supplies needed, and discuss how to set up and monitor safe indoor and outdoor early childhood environments. Prerequisite: EDU 102 or Departmental Approval.

EDU-204 Program Administration**(3-0-0-3)**

This course presents policy and procedures for operation of group care for children. Topics include principles of supervision, budgeting and funding, relationships with service and regulatory agencies and state licensing guidelines. This course meets the N.C. Child Day Care Section's requirements for child day care administrators. Prerequisite: None.

EDU- 222 Seminar Practicum--Special Needs**(2-0-10-3)**

Students will observe, plan appropriate experiences for, and interact with children with special needs. Requirements include a case study on an individual child with special needs. Prerequisites: EDU 121 or EDU 122 and EDU 202 or Departmental Approval.

EDU-225 Early Childhood Internship**(2-0-20-4)**

This course prepares the student to seek employment in an early childhood center. During class, students will discuss topics relating to the internship laboratory experience. In the laboratory setting, the student demonstrates the competencies needed by an Early Childhood Associate and identified for the program. Prerequisite: Successful Completion of the First Six Quarters.

Electricity

ELC-101 Fundamentals of D-C**(4-4-6)**

Principles of direct current electricity including basic electron physics; electrical units of measure; Ohm's law, series, parallel, and series-parallel resistive networks; Kirchoff's laws; basic measuring instruments; power transfer, Thevinin and superposition theorems. Laboratory experiments provide proof of the important concepts developed. Prerequisite: MAT 101 or Departmental Approval.

ELC-102 Fundamentals of A-C**(4-4-6)**

Principles of alternating current electricity including: sine wave analysis, resistive, capacitive, and inductive networks; phasor relations in complex circuits, non-resonant and resonant series and parallel L-C-R circuits; inductive coupling; air and iron core transformer analysis. Important theoretical concepts are substantiated by laboratory experiments. Prerequisite: ELC 101.

ELC-103 Basic Wiring Practices I**(2-0-6-4)**

This course provides instruction in the identification and safe use of the tools and materials common to the electrical installations. Topics to be covered include: National Electrical Code, electrical blueprint reading, planning, lay-out and the installation of electrical distribution equipment, lighting, overcurrent protection, conductors, branch circuits and conduits. Practical laboratory experiences will be used to reinforce topics covered in the classroom. Prerequisite: None.

ELC-104 Wiring Practices II**(3-0-9-6)**

This course is intended to add to the student's knowledge of electrical tools, materials, and test equipment. The focus in this course will be on application of skills and techniques learned in Basic Wiring Practices I through the use of shop experiences, and whenever possible, by the use of live projects. Electrical job site and industrial safety will be stressed throughout the course. The use and understanding of the National Electrical Code with regard to specific applications will be introduced. Prerequisite: ELC 103 or Instructor Permission.

ELC-105 Electrical Formulas and Computations**(3-0-0-3)**

Topics covered in this course will be directed to those mathematical areas employed in the electrician's field. Emphasis will be placed on whole numbers, fractions, decimals, simple formulas, powers and roots. Practical application and problems furnish the trainee with experience in wire size, electrical loads and simple electrical formulas. The student should be able to solve simple electrical mathematical problems. Corequisite: MAT 101 or Instructor Permission.

ELC-106 Electrical Code**(4-0-0-4)**

This course provides instruction in the use and interpretation of the National Electrical Code. Emphasis will be placed on solving practical field problems by interpreting specific articles, using tables, and performing code calculations to insure safe installations. Prerequisite: None.

ELC-108 Electrical Blueprints and Schematics**(3-0-0-3)**

The interpretation of schematics, diagrams and blueprints applicable to electrical installations with emphasis on electrical plans for residential, commercial, and industrial buildings is presented. Sketching schematics and diagrams, electrical symbols and notes according to the applicable codes will be a part of this course. Prerequisite: BPR 101 or Instructor Permission.

ELC-109 Computer Applications for Electricians**(3-2-0-4)**

This course will introduce the electrical student to the use of the IBM and IBM compatible personal computers. DOS, hardware, electrical specific software, basic word processing and integrated software will be covered. Emphasis is placed on using software for electrical calculations, applications, and computer programming of machine controls. Prerequisite: None.

ELC-110 Commercial/Industrial**(5-0-12-9)**

This course provides instruction in the lay-out, planning, and installation of wiring systems in commercial and industrial facilities. Emphasis will be placed on blueprint reading, the related National Electrical Code articles and the installation of typical commercial and industrial wiring systems. Among the topics to be covered in class and reinforced by lab experiences are: conduit bending and installation, commercial and industrial wiring methods, electrical energy efficiency, raceways and motor and controller installations. Prerequisite: ELC 104 or Instructor Permission.

ELC-111 Introduction to PLC's**(3-2-0-4)**

This course is designed to introduce the student to programmable logic controllers and their applications. Topics to be covered include: input and output modules and devices, power supplies, installation of PLC's and interfacing of equipment. Prerequisite: ELC 109 or Instructor Permission.

ELC-201 PLC Applications**(2-0-12-6)**

This course is designed to take up where the introductory course on programmable logic controllers left off. It will cover PLC in-depth programming, with an emphasis on instruction sets, advanced programming techniques, networking, communications, word and file moves, sequencers, and analog to digital and digital to analog conversions. The course is designed to be extensively "hands-on," and typical programs used in industry will be used as instruction tools. Prerequisite: ELN 111 or Instructor Permission.

ELC-202 Electrical Maintenance**(3-0-6-5)**

This course is designed to give the student the basic theory of maintenance, and the special skills to maintain electrical equipment found in residential, commercial, and industrial locations. Emphasis will be on maintenance theory, predictive and preventative maintenance, electrical equipment, and maintenance documentation. Prerequisite: None.

ELC-210 Work Experience**(0-0-20-2)**

Employment in industry that emphasizes work related to previously studied topics. The work experience should emphasize troubleshooting, repair, or installation of electrical/electronic industrial equipment. Upon completion of their work experience, students are required to provide a log of work activity. Prerequisite: Admission to Industrial Electrical/Electronics program, departmental approval of work area, demonstrated proficiency in courses related to work area.

ELC-1117 Basic Electricity**(3-2-0-4)**

A study of the electrical structure of matter and electron theory, the relationship between voltage, current, and resistance in series, parallel, and combination circuits. An analysis of direct current circuits by Ohm's Law and Kirchoff's Law. A study of the sources of direct current voltage potentials. Fundamental concepts of alternating current flow, reactance, impedance, phase angle, power, and resonance. Analysis of alternating current circuits. Prerequisite: None.

ELC-1118 Applied Electricity**(3-2-0-4)**

Provides fundamental concepts in single and polyphase, alternating current circuits, voltages, currents, power measurements, transformers, and motors. Instruction in the use of electrical test instruments in circuit analysis. The basic concepts of AC and DC machines and simple system controls. An introduction to the type of control used in small appliances, such as thermostats, timers, or sequencing switches. Applicable sections of the current National Electrical Code will also be presented. Prerequisite: ELC 1117.

ELC-1119 Electricity for Welders**(3-2-0-4)**

A study of the relationship between voltage, current, and resistance in series and parallel circuits. Analysis of A.C. and D.C. current motors and generators. A study of transformers, rheostats and controls, basic study of grounding, bonding and calculation of conductors. Prerequisite: None.

Electronics

ELN-104 Semiconductor Devices**(4-4-6)**

An introduction to semiconductor theory, followed by D.C. analysis of the PN junction, semiconductor diodes (conventional and Zener) and bipolar transistors. Graphical analysis of characteristic curves, load lines, and transistor biasing is studied in conjunction with thermal effects and power dissipation. Prerequisite: ELC 102.

ELN-105 Industrial Electronics (1-0-3-2)

This course introduces an overview of industrial electronics from simple switching, solid state devices, simple circuits including ladder logic, programmable controllers and through other microprocessor controlled equipment. Included will be sensory devices and detectors applicable to fields such as industry, automotive, heating and air conditioning. Emphasis will be placed on troubleshooting these devices and systems. Prerequisite: None.

ELN-106 Industrial Electronics (3-2-0-4)

This course introduces an overview of industrial electronics from simple switching, solid state devices, simple circuits including ladder logic, programmable controllers and through other microprocessor controlled equipment. Included will be sensory devices and detectors applicable to fields such as industry, automotive, heating and air conditioning. Emphasis will be placed on troubleshooting these devices and systems. Prerequisite: None.

ELN-110 Technical Documentation (1-2-2)

A course in documenting maintenance procedures and outlining troubleshooting steps. The use of technical manuals and documenting revisions will be an objective. The procurement of parts and using cross references for replacements will be covered. Prerequisite: None.

ELN-111 Fabrication Techniques (1-4-0-3)

A course which includes High Reliability Interconnection Technology for soldering techniques. The student will also practice wiring and assembly techniques on electronic assemblies. High Reliability Re-work Technology will be taught with single and multi-layer printed circuit boards. Land and trace repair with installation and plating of edge connectors will be featured. Prerequisite: None.

ELN-150 Control Devices (3-2-0-4)

This course is a study of solid state electronic devices with emphasis on digital applications of these devices in automotive electronic circuitry. Topics include diodes, triodes, transistors, transistor amplifiers and switches, logic circuitry and Hall-effect switches. Applications include troubleshooting and analyzing electronic problems in automotive circuitry. Prerequisite: None.

ELN-201 Linear Integrated Circuits (4-4-6)

A study of linear integrated circuits and their use in both linear and nonlinear applications. A review of basic operational amplifiers is followed by a more in-depth look at applications such as voltage regulators, waveform generation, analog to digital conversion and transducers. Prerequisite: ELN 104.

ELN-202 Communications Systems (4-4-6)

A study of the concepts of generation and amplification of carrier signals, various modes of modulation (AM, FM, SSB, Pulse, and Multiplex), transmission lines, antennas and hard wired systems. Various types of receivers, including AM, FM, and Single Sideband are studied, and emphasis is placed on such specialized receiver circuits as RF and IF amplifiers, mixers, and detectors. The student uses schematic diagrams and lab experiments to learn proper methods of testing, adjusting, and troubleshooting. An overview of such communication systems as Broadcast, Mobile, Marine, Radar, Navigation, Cable, Microwave, Cellular Telephones, and Satellites is included. Prerequisites: ELN 110, ELN 201, ENG 103, MAT 102, and PHY 114.

ELN-203 Digital Fundamentals**(4-4-6)**

This course introduces the student to the concepts of digital logic and digital number systems. This includes basic logic functions, Truth tables, Boolean algebra, and combinatorial logic circuits analysis. The basic characteristics of the various logic families are covered. Prerequisite: None.

ELN-204 Digital Applications**(4-4-6)**

A continuation of the study of logic families and their interfacing. Other digital devices are introduced and their applications discussed. This includes latches, counters, registers, decoders, and memory devices. Complete digital systems are studied including system controllers and data transmission. Prerequisite: ELN 203.

ELN-210 Analytic Troubleshooting**(1-2-2)**

Analytic Troubleshooting gives the electronics technician a method of using his or her present knowledge more effectively in solving a problem. This process aids in finding the cause of the problem quickly, correcting the cause of the problem and not just the effect, fixing the problem so it stays fixed, in not creating new problems in the process of solving the old ones, and in encouraging the technician to think beyond the fix of the problem. Prerequisite: None.

ELN-223 Microprocessor Principles**(4-4-6)**

Introduces the student to microprocessor hardware and software using the M6800. Software includes basic programming concepts addressing modes and instruction set while the hardware discussion covers the microprocessor components such as ROM, RAM, MPU, PIA, and ACIA. Prerequisite: ELN 204.

ELN-224 Microprocessor Interfacing**(4-4-6)**

Application of concepts covered in ELN 223. Interfacing microprocessor to devices external to microprocessor. Includes standard techniques for controlling power circuits, motor drives and interface circuit to standard transducer. Also includes personal computer interface to analog devices. Prerequisite: ELN 223.

ELN-225 Industrial Controls**(4-4-6)**

A presentation of topics relating to the control of industrial processes. Signal conditioning, transducers, and control loop characteristics are covered. Practical lab work includes hands-on experience with commercial programmable logic controllers and data acquisition. Relay ladder logic and programmable controller ladder logic are stressed. Prerequisite: None.

ELN-1120 Direct and Alternating Current**(2-6-0-5)**

This course includes a study of a structure of matter and the electron theory; the relationship between voltage, current, and resistance in series, parallel, and series-parallel circuits; analysis of direct current circuits by Ohm's Law and Kirchhoff's Law; sources of direct current potentials. Prerequisite: None.

ELN-1121 Direct and Alternating Current**(2-10-0-7)**

This course is a continuation of ELN 1120 including the fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power, resonance; and alternating current circuit analysis. Prerequisite: ELN 1120.

ELN-1122 Solid State Devices**(4-4-0-6)**

This is a course in solid state theory and the servicing of AM and FM radio and stereo receivers. Devices studied include the diode, transistor, FET, Zener diode, and the VCO as circuit components. The circuits studied are multiplexing decoders, and power supplies. An introduction to troubleshooting of AM, FM Stereo receivers is included. Prerequisite: ELN 1121.

ELN-1123 Digital Circuits**(4-6-0-7)**

This course is a study of Binary notation based on the binary numbering system. The conversion of analog to digital, analysis of logic gates, solid state display of AND gates, OR gates, NAND gates, NOR gates, and exclusive OR and NOR gates. The course will also include the study of digital circuits used in home entertainment devices including logic display systems, counters, registers, and memories. Operational Amplifiers and microprocessors. Prerequisite: ELN 1122 or Departmental Approval.

ELN-1124 Audio Servicing**(5-10-0-10)**

This course will include servicing, alignment, and installation of AM and FM Stereo receiving equipment for the home and automobile. Recording by analog, digital, and laser techniques will be covered. The theories and trouble-shooting of the compact disc will be studied in detail. Prerequisite: ELN 1123.

ELN-1125 Video Servicing**(5-10-0-10)**

This course includes the theory of operation of black and white and color television receivers. A detailed study will be included of all circuits of the TV receiver in the classroom with laboratory sessions and supervised servicing practice to develop skills in using modern test equipment for repairs. This course will also include schematic reading with a practical approach related to troubleshooting and repairing the VCR. TV antenna systems with amplified signals will be analyzed. Prerequisite: ELN 1124.

Emergency Medical Science

EMS-100 Introduction to Emergency Medical Services**(2-2-0-3)**

An introduction to the pre-hospital care of the critically ill or injured that will prepare students to act as first responders. Students will complete certification requirements for cardiopulmonary resuscitation. Prerequisite: Departmental Approval.

EMS-101 Fundamentals of EMS**(7-6-0-9)**

This course is designed to introduce the student to the health care system and the function of emergency medical service providers within that system. A team approach is emphasized, and initial assessment and management of illness and injury is introduced. Fundamental, cognitive and manipulative skills common to the basic emergency care and assessment of both ill and injured patients will be practiced in the laboratory and clinical portions of this course. Theoretical principles underlying the use of equipment commonly found on ambulances, and initial treatment and evaluation of various emergency problems are emphasized. Upon successful completion of this course the student will be eligible to test for certification as an Emergency Medical Technician through the North Carolina Office of Emergency Medical Services. Prerequisite: Departmental Approval.

EMS-103 Principles of Extrication and Rescue**(3-4-0-4)**

This course is designed to acquaint the student with techniques of extrication and rescue by presenting a comprehensive approach to the problems of gaining access, disentanglement, packaging and removal of persons entrapped in wrecked vehicles. Skills will also include water rescue, rescue from heights, rescue from depths, and rescue from burning buildings. A wide range of problems which occur during any rescue operation and for which the professional rescuer must be prepared is included. Prerequisite: Departmental Approval.

EMS-104 Injury Management I**(4-3-0-5)**

This course emphasizes physical assessment of patients with specific medical and trauma related problems. In addition, principles of fluid and electrolyte balance are discussed as they apply to the treatment of shock and other disorders. Prerequisites: EMS 101 and Current N.C. EMT Certification. Corequisites: BIO 102 and EMS 105 or Departmental Approval.

EMS-105 Clinical Seminar and Practicum I**(0-0-9-3)**

Beginning experience in hospital observation and field experience. Students present case studies from their field or hospital experiences for informal discussion by the group. Emphasis is placed on the integration of theoretical knowledge obtained in EMS courses with the realities of practical field oriented patient care. Prerequisites: EMS 101 and Current N.C. EMT Certification. Corequisites: BIO 102 and EMS 104 or Departmental Approval.

EMS-106 Introduction to Pharmacology**(2-2-0-3)**

This course introduces commonly used drug measurements and the calculation of dosages. Parenteral techniques of drug administration are emphasized. Students will become familiar with drug forms, drug sources, and control of drug use. Drugs approved for EMT-Advanced Intermediate Administration will be discussed. Prerequisites: EMS 104 and EMS 105 or Departmental Approval.

EMS-108 Clinical Seminar and Practicum II**(0-0-9-3)**

Planned learning in hospital and field settings is included. Emphasis is placed on the integration of theoretical knowledge with clinical practice. Care of patients with disorders of hydration, volume loss, and metabolism is included. Prerequisites: EMS 104 and EMS 105 or Departmental Approval.

EMS-110 Pharmacology for EMS**(3-2-0-4)**

This course explores the fundamental classification and action of common chemotherapeutic agents. Emphasis is placed on the action and use of compounds most commonly encountered in the treatment of acutely ill patients. Prerequisites: EMS 106 and EMS 108. Corequisites: EMS 111 and EMS 201.

EMS-111 Clinical Seminar and Practicum III**(0-0-9-3)**

Guided learning in hospital and field settings is included. Techniques of drug administration, intervention, and side effects will be stressed. Management of acute cardiac disorders will be emphasized. Prerequisites: EMS 106 and EMS 108. Corequisites: EMS 110 and EMS 201.

EMS-112 Emergency Communications and Record Keeping**(2-2-0-3)**

This course prepares students to effectively utilize emergency communications equipment and to accurately complete required documentation of emergency medical care. Emphasis is placed on understanding communications systems and the expanding use of information management systems. Prerequisite: Departmental Approval.

EMS-113 Emergency Vehicle Operation**(2-2-0-3)**

This course examines the principles and practices governing the safe operation and maintenance of emergency vehicles. Emphasis is placed on motor vehicle laws affecting emergency vehicle operation and improved defensive driving and collision avoidance techniques. Prerequisite: Departmental Approval.

EMS-201 Advanced Life Support I (3-3-0-4)

In this course, anatomy and physiology of the cardiopulmonary systems are reviewed. Basic electrocardiography and the study of common cardiac arrhythmias are introduced. Coronary artery disease, acute myocardial infarction including early warning signs, electrical arrhythmias, and mechanical complications of heart disease are discussed. The laboratory provides programmed instruction in basic arrhythmia recognition and familiarizes the student with cardiac monitoring techniques and devices. Prerequisites: EMS 106 and EMS 108. Corequisites: EMS 110 and EMS 111.

EMS-202 Clinical Seminar and Practicum IV (0-0-9-3)

Guided learning experience in the care of patients with complex problems is included. Emergency room, intensive care unit, and field experience provide emphasis on the assessment and treatment of victims with unstable mental and physical problems of a critical nature. Prerequisites: EMS 108, EMS 110, and EMS 201. Corequisites: EMS 204 and EMS 208.

EMS-203 Emergency Psychiatric Care (3-0-0-3)

This course begins with an overview of the characteristics of various neurotic and psychotic disorders. Emergency intervention in patients who exhibit suicidal, assaultive, destructive, resistant, bizarre, toxic, amnesic, or paranoid behavior is covered. In addition, the student becomes acquainted with the paramedic role during the pre-hospital care of psychiatric patients and the legal commitment process for mandatory psychiatric treatment. Prerequisite: PSY 203 or Departmental Approval.

EMS-204 Adjuncts for Airway Control and Ventilation (2-0-0-2)

This course is designed to acquaint the student with basic and advanced techniques of adjunctive airway control and ventilation of patients who are experiencing respiratory compromise. Anatomy and Physiology of the respiratory system is reviewed. Manual techniques of airway management and artificial respiration are reviewed and mechanical airway adjuncts are introduced. Emphasis is placed on advanced management techniques including endotracheal intubation. Prerequisite: Departmental Approval.

EMS-206 Clinical Seminar and Practicum V (0-0-9-3)

Experience in the practice of advanced life support skills used is provided. Emphasis is placed on the care of patients with cardiovascular disorders. Experience is also provided in the care of patients during the prepartal, interpartal, and postpartal phases of pregnancy. Prerequisites: EMS 202, EMS 204, and EMS 208. Corequisite: EMS 207.

EMS-207 OB, Newborn, and Pediatric Emergencies (4-2-0-5)

Assessment and decision-making concerning obstetrical and gynecological emergencies are covered in this course. The student is prepared to recognize imminent birth and assist the mother in the delivery process. Recognition of both normal and complicated deliveries is expected. Emergency resuscitation techniques for the newborn, transportation of the high-risk infant, care related to traumatic abortion and to the rape victim are included. Emergency care specific to children concludes the course. Prerequisites: EMS 202, EMS 204, and EMS 208. Corequisite: EMS 206.

EMS-208 Advanced Life Support II--Trauma (2-2-0-3)

Review of the prehospital management of trauma victims. Emphasis is placed on rapid assessment and intervention in patients with thoracic, central nervous system, soft tissue, musculoskeletal, and multiple systems injuries. Prerequisites: EMS 110, EMS 111, and EMS 201. Corequisite: EMS 202.

EMS-210 Advanced Life Support III--Medical (2-2-0-3)

This course addresses medical and environmental injuries and illnesses in terms of advanced life support techniques, appropriate pharmacologic agents, and interventions. Prerequisites: EMS 110, EMS 111, and EMS 201. Corequisite: EMS 202.

EMS-211 Clinical Symposium (3-2-6-6)

The course allows the augmentation of all emergency care skills including basic and advanced life support, psychiatric, and maternity care as well as patient handling techniques. Students are expected to function as team members in field experience. Prerequisite: EMS 206.

EMS-213 Hazardous Materials and Disaster (2-2-0-3)

In this course students are exposed to a variety of problems and hazards encountered by emergency services personnel. Chemical poisons, both airborne and contact, are studied. Management of complex emergency situations and a study of disaster experience are included. Prerequisite: Departmental Approval.

EMS-215 EMS Personnel Management (4-0-0-4)

This course explores the problems of management in the EMS system. Basic principles of supervision and management organization are presented. The structure and function of municipal governments, EMS grantsmanship, regulatory agencies, systems management, legal and other topics relevant to the EMS manager are discussed. Problems of manpower and training are also included. Prerequisites: PSY 101 and Departmental Approval.

EMS-216 Fundamentals of Public Safety (3-2-0-4)

This course introduces the students to the roles of the various public safety personnel. Interaction between EMS and other public safety agencies is stressed. Emphasis is given to the basic practices of fire services personnel. Prerequisite: Departmental Approval.

English

ENG-093 Guided Reading Skills (5-0-5)

A pre-college reading course that emphasizes both reading and responding to written material. Reading skills include vocabulary development, recognition of main ideas, identification of patterns of organization. Responding skills include paraphrasing, summarizing, and discussing ideas encountered in written materials. Prerequisite: None.

ENG-094 Reading and Critical Thinking Skills (5-0-5)

Development of skills introduced in ENG 093, including vocabulary development, identifying main ideas and organizational patterns. Emphasis is placed on extracting implied meanings, recognizing author's tone and style, drawing conclusions, and responding to written material through journals, essays, and group discussion. Prerequisite: ENG 093 or placement test.

ENG-095 Mechanics of English Grammar (5-0-5)

A pre-college course designed to give students a thorough knowledge of basic English grammar. Special emphasis placed on identifying parts of speech, building sentences, identifying correct usage patterns, using punctuation and combining sentences. Prepares students for the terminology and concepts required for ENG 101. Prerequisite: None.

ENG-097 Adaptive Technology (3-0-3)

This course emphasizes the use of technology in becoming an independent learner. Includes writing with the word processor, using computerized library research tools, note taking with recorders. Prerequisite: None.

ENG-101 Fundamentals of English (3-0-3)

A review of basic grammar fundamentals, the course is designed to aid students in achieving standard, effective self-expression, with emphasis on improving and developing appropriate written and spoken communication in day-to-day situations in their work and in their social life. Prerequisite: None.

ENG-102 Composition (3-0-3)

Designed to aid students in further improvement of written communications, with emphasis on expository composing, through effective sentence structure, well-developed paragraphs, and fully organized compositions. Prerequisite: ENG 101 or ENG 111.

ENG-103 Report Writing (3-0-3)

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Topic selection, technical style, graphics, research strategies, and effective presentation are emphasized. All students are required to prepare a full-length report based on material in their chosen curriculum. Prerequisites: ENG 102 and Second-Year Status in a Major Area.

ENG-107 Technical Composition (3-0-3)

Designed for engineering technology students, this course requires intensive writing experience in on-the-job short reports and documents including the following: definitions, product and mechanism descriptions, project, progress, situation, and site visit reports, form reports, letters of application and resumes. It emphasizes audience analysis, accuracy, specificity, and formatting for effective workplace communication. Prerequisite: ENG 102.

ENG-110 Writing With a Word Processor (0-2-1)

An introduction to composing using the word processor and applications software. Students complete a specified number of written assignments for this or other classes and demonstrate proficiency in writing, editing, and printing. Prerequisite: None.

ENG-111 Grammar (5-0-5)

A basic course covering the fundamentals of English grammar. Emphasis is on grammar and sentence structure. Intended to provide the students with the basic tools for their roles in business. Prerequisite: None.

ENG-125 Film as Literature (2-2-3)

An introduction and general exploration of the elements that comprise film art: film production, form, style, history, genres, and theory. Attendance at five film showings and a critical analysis of one film are required. Prerequisite: None.

ENG-150 Grammar and Composition (3-0-3)

A review of grammar, usage, mechanics; an introduction to library skills; emphasis on organizing and developing paragraphs and themes. Prerequisite: Satisfactory score on grammar test or ENG 101.

ENG-151 Composition and Introduction to Literature (3-0-3)

A continuation of ENG 150 with emphasis on writing interpretative essays on thematic and structural topics in the short story, drama, and poetry. Prerequisite: ENG 150.

ENG-153 Composition and Introduction to Literature (5-0-5)

A review of grammar, usage, mechanics; an introduction to library skills; emphasis on close reading and the writing process with expository and literary paragraphs and interpretive essays on structural topics in the short story and poetry. Prerequisite: English 101 or Placement Test.

ENG-154 Composition and Research (5-0-5)

A study of research methods, including bibliographic resources, for the purpose of developing extended compositions, summaries, and library research papers based on the literary genres of drama and the novel; an emphasis on analysis, research, and documentation. Prerequisite: English 153.

ENG-204 Oral Communications (3-0-3)

A study of basic concepts and principles of oral communications. Emphasis is placed on the speaker's attitude, diction, voice, and the application of particular techniques to correct speaking habits and to produce effective oral presentations. Prerequisite: None.

ENG-206 Written Communication Skills (3-0-3)

Develops skills in the structure and strategy of writing action-producing letters and memorandums. Emphasis is placed on letters involving credit, collections, adjustments, complaints, orders, acknowledgments, remittances, inquiries, and job applications with resumes. Prerequisite: ENG 102.

ENG-215 English Literature I (5-0-5)

A survey of English literature from its Anglo-Saxon origins through the Middle Ages, the Renaissance, the Restoration and Eighteenth century with emphasis on representative writers and works in their historical context. Prerequisite: ENG 154.

ENG-216 English Literature II (5-0-5)

A survey of English literature from the Romantic era through the Victorian and modern periods with emphasis on representative writers and works in their historical context. Prerequisite: ENG 154.

ENG-223 American Literature I (5-0-5)

A survey of American Literature from the colonial period with its utilitarian literature through the romantic and transcendental writers through realism. Major writers included are Hawthorne, Poe, Emerson, Whitman, Melville, Dickinson, Clemens, Henry James. Prerequisite: ENG 154.

ENG-224 American Literature II (5-0-5)

A survey of American literature from local color and regionalism through naturalism to modern literature. Major writers include Frost, Cather, Anderson, T.S. Eliot, O'Neill, Faulkner, Wolfe, plus modern poets. Prerequisite: ENG 154.

ENG-225 Introduction to the Theatre (3-0-3)

An introduction to understanding and experiencing drama with a general exploration of the elements that comprise theatre: play attendance, acting, directing, the critic, history, and literature. Attendance at one play and in-depth reading of two plays are required. Prerequisite: ENG 153 or Departmental Approval.

ENG-250 Creative Writing I (2-2-3)

In a workshop environment designed to motivate and to assist in producing original work, students will write a variety of material--with an emphasis on poetry--with the intent of publication. Prerequisite: Instructor's Approval.

ENG-251 Creative Writing II (2-2-3)

In a workshop environment designed to motivate and to assist in producing original work, students will write a variety of material--with an emphasis on short fiction--with the intent of publication. Prerequisite: Instructor's Approval.

ENG-252 Creative Writing III (2-2-3)

In a workshop environment designed to motivate and to assist in producing original work, students will write a variety of material--with an emphasis on journal and article writing--with the intent of publication. Prerequisite: Instructor's Approval.

ENG-260 Children's Literature (3-0-3)

This course is a study of the historical development of children's literature with critical analysis of the various literary genres available for children. Emphasis is on the principles of selecting literature for children and the methods for presenting it to children. Prerequisite: None.

ENG-1102 Communication Skills (3-0-0-3)

Designed to promote effective communication through correct language usage in speaking and writing. Prerequisite: None.

French

FRE-101 French I (3-0-3)

This course provides an introduction to the French language emphasizing listening, speaking, and writing with concentration on oral communication. Lab practice is expected of students. Prerequisite: None.

FRE-102 French II (3-0-3)

This course is a continuation of FRE-101. Lab practice is expected of students. Prerequisite: FRE 101 or Placement Test.

FRE-103 French III (3-0-3)

This course is a continuation of FRE-102. Lab practice is expected of students. Prerequisite: FRE 102 or Placement Test.

Geography

GEO-101 World Geography (3-0-3)

A world regional study that emphasizes the various geographic/cultural regions throughout the world. Major types of physical environments will be discussed in relation to economics, trade, and communications patterns. Prerequisite: None.

Diesel Vehicle Maintenance

HEV-1101 Diesel Engine Theory and Practice (5-0-12-9)

This course is designed as an introduction to the most common types of diesel engines. Each student will be subjected to the principles and theory of the diesel engine and required to work with several different types of engines. As the engines are rebuilt the proper use of hand tools and instruments will be taught. Standard procedures will be used in all engine work. Methods of checking the various parts of the engines will be employed. Prerequisite: None.

HEV-1102 Diesel--Electrical, Fuel, Lubricating and Cooling Systems (7-0-12-11)

This course continues from the engine course and will subject the student to the electrical system, fuel system, and lubricating systems. Each area will be treated as an individual unit. Each student will compare the various systems of heavy equipment. Preventive maintenance will be stressed in all areas. Types of fuel and the importance of pure and clean fuel will be taught. Tools, instruments, and machines related to these units will be presented. Prerequisites: HEV 1101 and MEC 1101.

HEV-1103 Diesel--Hydraulic Systems, Steering, Suspension, Braking, Power Train, Injector Testing and Servicing (6-0-12-10)

This course continues from the engine course and will advance the student into the actual hydraulic systems, steering suspension, braking, cooling system, and injector servicing and testing. Each subject area will be treated as an individual unit taught separately. Each student will be required to study the difference in systems on various pieces of equipment. Tools, machines, and instruments used in the various aspects of this work will be presented. Prerequisite: HEV 1102.

HEV-1105 Diesel--Service and Repairs (4-0-6-6)

This course is constructed to require students to utilize all tools, instruments, and machines for analysis of all aspects of service and repair. The procedures employed in service and repair will be the same as expected in the industry. Each student will be expected to show individual ability and initiative in determining the troubled area of heavy equipment. Prerequisite: HEV 1103.

HEV-1107 Power Train Systems (4-0-6-6)

This course is designed to go into all types of power trains in heavy equipment. A study of the theory of power trains will be presented and applications of maintenance and repair will give each student an opportunity to review various types of power trains. Actual experience in the operation of power trains will be required to give each student an overview of a variety of experiences. Special tools and instruments used in maintenance and repair of power trains will be presented. Prerequisite: HEV 1103.

History

HIS-101 Science, Society, and Human Community (3-0-3)

An examination of the history of science and technology and the impact on the cultures in which they flourished. Major emphasis will be placed on the role of high technology and modern society, ecological values, and the realm of cultural dissipation and renewal in light of new technologies. Prerequisite: None.

HIS-201 World Civilization I (3-0-3)

The history of the ancient world up to and including the Romans. What historians think about, the nature of evidence, how societies develop, function and change, the role of the individual in history. Covers Paleolithic and Neolithic peoples, the ancient Near East, India, China, the Greeks, and the Romans. Prerequisite: None.

HIS-202 World Civilization II (3-0-3)

The history of the world during the rise, height, and decline of medieval European society. A comparative look at the cultures and societies of Islam, Africa, India, China, Japan, and the New World. The nature of European feudalism; reasons for its decline; Protestant Reformation; the Age of Discovery; scientific and political revolutions; the Enlightenment. Prerequisite: None.

HIS-203 World Civilization III (3-0-3)

This course presents an overview of modern history from the Industrial Revolution to contemporary issues. A look at nationalism, socialism, the modern scientific viewpoint, intellectuals and society, modernism, pop culture, feminism, and ecology in the West; the struggles against colonialism and imperialism and attempts to modernize the Third World. Prerequisite: None.

HIS-210 American History I (3-0-3)

This course examines American history from the beginning of 1850 with special emphasis on our natural and Native American heritage. Major topics include the early colonies, the Enlightenment, the Great Awakening, roots of the American Revolution, the Constitution and Bill of Rights, American writers, the early women's movement and abolitionism. Prerequisite: None.

HIS-211 American History II (3-0-3)

This course examines American history from the 1850s to 1929 with special emphasis on social and economic change and cultural developments. Topics include the Civil War, Reconstruction, Industrialization, the labor movement, progressivism, expansionism, World War I, and mass consumer culture. Prerequisite: None.

HIS-212 American History III (3-0-3)

This course looks at the United States since the Great Depression with special emphasis on social, economic, and cultural change. Major topics include origins of the depression, FDR and the New Deal, World War II and the Holocaust, the nuclear age, Truman, Ike, and the 50s, roots of the Alternative culture, the Civil Rights and Black Power movements, feminism, ecology, and the conservation response. Prerequisite: None.

Hotel and Restaurant Management

HRM-101 Hospitality Orientation (3-0-0-3)

Traces the growth and development of the hospitality industry from early inns to modern day food and lodging complexes that have become an integral part of our society. This course offers the student an overview of the hospitality industry; its size and scope; nature and scope of the market it serves; types of establishments it includes; how hotels and restaurants are organized; purposes and functions of each department within the hospitality operation. Emphasis will be placed on giving the student an insight into the problems in the hospitality industry and the importance of sound relationships with both the public and other operations within the industry. Prerequisite: None.

HRM-104 Food Purchasing I (3-0-0-3)

A study of the purchasing function as it operates in hotels and restaurants. The student is introduced to the market and the American market system. The student will investigate the various choices offered to the purchaser in terms of types of buying schemes and procedures for each, as well as buying foods based on operational needs. Specifications for the following food types will be developed and the vocabulary specific to purchasing that food type will be studied: fresh and processed fruits and vegetables, cereals and grains, fats and oils, and miscellaneous groceries. Prerequisite: None.

HRM-106 Front Office Procedures**(5-2-0-6)**

A course designed to present a study of the various aspects of front office operations, including procedures in reservations, registration, front office accounting, night audit, check out, and settlement. Emphasis is placed on guest, employee, and public relations responsibilities of the front office staff, as well as their role in coordinating interdepartmental communications. Practical application is incorporated with the use of the Mountain Tech Lodge front desk. Computer simulations are employed to facilitate understanding of various front office procedures and yield management techniques. Prerequisite: AOT 100 and BUS 120.

HRM-108 Food Cost Control**(3-0-0-3)**

The student will be instructed in food cost accounting techniques as they relate to purchasing, receiving, storing, issuing, production, revenue, and inventory controls. Through use of case studies which will include menu and portion costing, food cost percentages, cost control records forecasts, and sales histories, the student will utilize these techniques in the actual operational sense. The student will be given an understanding of the importance of food cost control and the various techniques which relate to it as management tools. Prerequisite: MAT 110.

HRM-109 Food Purchasing II**(3-0-0-3)**

This course is a continuation of the purchasing function as it operates in hotels and restaurants. The student will analyze quality of buying based upon end use of the product, and will develop specifications and study the purchasing terminology associated with: convenience foods, coffee, tea, fish, seafood, milk, dairy products, poultry, eggs, and meats (beef, pork, lamb, and veal). Prerequisite: HRM 104 or departmental approval.

HRM-110 Supervised Work Experience**(2-0-40-6)**

A supervised practical training experience providing the student an opportunity to work in the hospitality industry and apply and enhance the skills, theories, and procedures acquired in the hospitality curriculum. Prerequisite: Successful completion of major courses through the third quarter or departmental approval.

HRM-204 Hotel Information Systems**(2-2-0-3)**

This course is an overview of computer applications for all hospitality functional areas including: reservations, property management systems, service and management applications of food and beverage systems, and information systems. An introduction to the most common software utilized in the industry is incorporated along with tutorial practice in the computer lab. Prerequisite: Completion of first year curriculum or departmental approval.

HRM-206 Hospitality Management**(4-2-0-5)**

This course is designed to provide the student with the underpinnings of general management theory and processes, in an environment where they will be applied to the hospitality profession. Prerequisite: First Year Curriculum and HRM 204.

HRM-207 Laws of Innkeeping**(6-0-0-6)**

This course is designed to help the student understand the attitudes of the courts when an innkeeper is involved in litigation, and to create an awareness of the many responsibilities which the law imposes upon the innkeeper. The law, and the role laws play in expressing the ever evolving norms of our society are examined. Prerequisite: None.

HRM-208 Supervisory Housekeeping**(3-2-0-4)**

Provides the student with a basic foundation in the scope, responsibilities, language, materials and problems of hotel housekeeping.

Special emphasis will be placed upon the criteria for the proper selection of guest room equipment and supplies as well as the techniques, tools and chemicals required to maintain both public and guest spaces in the high degree of cleanliness and readiness necessary for the comfort and safety of hotel patrons and guests. Practical application will be provided in the college's own Mountain Tech Lodge. Prerequisite: None.

HRM-209 Hospitality Personnel Management (3-0-0-3)

Gives to the student an acute awareness of the problems in an industry which offers service to the public performed by many employees; the problems of labor supply, selection, training, promotion, and morale. This course is a compilation of the principles and practices found to be of great value in hotels and restaurants in the management of employees. Emphasis is placed upon the general principles which may be applied in any size operation, from department heads to general manager of a large hotel. The needs and purposes of the employer, the welfare and desires of the employees and the interest and demands of the community will be taken into account as they influence employer-employee relations. Prerequisite: Completion of First-Year Curriculum or Departmental Approval.

HRM-210 Hospitality Marketing (2-2-0-3)

This course differentiates services marketing and explains its unique challenges. Emphasis is placed on understanding the behavior and needs of hospitality consumers and developing a marketing plan in response to their input. Methodology for marketing research and information systems management is examined. Marketing segmentation and positioning, advertising, promotions and group sales are reviewed. In addition, the marketing organizational and management structure is explored, along with responsibilities for interaction and coordination with other departments and agencies. Prerequisite: HRM 110 or Departmental Approval.

HRM-211 Menu Engineering (3-0-0-3)

This course is designed to introduce the menu as a primary tool for food service financial management. The student will learn how pricing, merchandising, design, and content decisions determine menu creation. Menu analysis techniques will be employed for ascertaining menu effectiveness, and its impact on profitability. Each student will develop their own restaurant concept, present market research that manifests the positive indicators for the project, select menu items compatible with their theme, and finish with a photo ready paste-up of the menu. Prerequisite: CSP 101, HRM 104, or Departmental Approval.

HRM-213 Food Service Sanitation (3-0-0-3)

Applied Food Service Sanitation deals with the basic principles of sanitation and safety and their relationship to the food service industry. The causes and control of food-borne illness; sanitary practices in food preparation; dish washing procedures; sanitation of kitchen, dining room, and equipment; sanitary regulations; personal hygiene; and safety procedures will be emphasized. Upon successful completion of the course a sanitation certification from the National Restaurant Association Education Foundation will be granted. Prerequisite: None.

HRM-216 Beverage Management (3-2-0-4)

This course offers an historical perspective of the beverage industry as well as current issues. Beverage operations are reviewed with emphasis on matching the facility to the target clientele. Design and layout of the bar, equipment purchasing and use, inventory and control procedures, budgeting for profit, and industry regulations are explored. Spirits, wines, and beers are examined, from the processes used in their production to their sales, service and storage. Mixology, highlighting the basic drink families, is practiced by the student in a service simulation. Prerequisite: None.

HRM-218 Dining Room Management**(3-0-0-3)**

A study of the dining room environment from the perspective of the manager. The course will focus on the design of dining rooms, merchandising, salesmanship, scheduling, hiring, motivation, and advanced service procedures as "flambe" service, wine service and handling complaints. Prerequisite: CSP 102 or departmental approval.

HRM-220 Advanced Hospitality Management**(2-4-0-4)**

This course is designed to facilitate the student's understanding of the role of a manager as a problem solver. A six-part process for creative problem solving is examined to prepare the student to apply the problem solving methodology in actual business settings. The student will complete a project for a hospitality business in the community in which they will analyze the problem, gather data, formulate suggested solutions, and make written recommendations for the most workable options. The student will draw on the knowledge and practical experience they have garnered from the first six quarters of the program to carry out this capstone assignment. Prerequisite: HRM 110 and HRM 206.

Humanities/Fine Arts

The following courses are classified as Humanities/Fine Arts. For complete information, see the course description according to the prefix listed by the course title.

Anthropology

ANT-101 Introduction to Anthropology

Art

ART-101 Introduction to Art

ART-104 An Introduction to Art II

English

ENG-125 Film as Literature

ENG-215 English Literature I

ENG-216 English Literature II

ENG-223 American Literature I

ENG-224 American Literature II

ENG-225 Introduction to the Theatre

ENG-260 Children's Literature

French

FRE-101 French

FRE-102 French II

FRE-103 French III

Geography

GEO-101 World Geography

History

HIS-101 Science, Society and

Human Community

HIS-201 World Civilization I

HIS-202 World Civilization II

HIS-203 World Civilization III

HIS-210 American History I

HIS-211 American History II
HIS-212 American History III

Music

MUS-101 Introduction to Music

Philosophy

PHI-101 Ethics and Human Values
PHI-102 Introduction to Philosophy
PHI-103 History of Western Philosophy
PHI-200 Religions of the World

Political Science

POL-110 Comparative Political
Cultures

Spanish

SPA-101 Spanish I
SPA-102 Spanish II
SPA-103 Spanish III
SPA-201 Intermediate Spanish I
SPA-202 Intermediate Spanish II
SPA-203 Intermediate Spanish III

Electrical Safety

ISA-102 Electrical Safety (3-0-0-3)

This course explores personnel, management, and supervisor responsibility in the following areas: fire and accident prevention, investigation and reporting, personal protective equipment, OSHA regulations, local, state and federal laws concerning workplace safety and hazardous materials, first aid and the use of safety committees. Prerequisite: None.

Operations Management Technology

ISC-102 Industrial Safety (3-0-3)

Problems of accidents and fire in industry. Management and supervisory responsibility for fire and accident prevention. Additional topics cover accident reports and the supervisor; good housekeeping and fire prevention; machine guarding and personnel protective equipment, state industrial accident code and fire regulations; the first aid department and the line of supervisory responsibility; job instruction and safety instruction; company rules and enforcement; use of safety committees; insurance carrier and the Insurance Rating Bureau, Occupational Safety & Health Act (OSHA); and advertising and promoting a good safety and fire prevention program. Prerequisite: None.

ISC-105 Introduction to Production (5-0-5)

A broad overview of the processes used to convert raw material into usable consumer or producer products. Different manufacturing processes and modern techniques used to plan, monitor, and control the process will be discussed. Prerequisite: None.

ISC-202 Quality Control (3-2-4)

The course covers the principles and techniques of statistical quality control and statistical process control (SPC). Prerequisite: MAT 160.

ISC-209 Plant Layout**(1-4-3)**

A practical study of factory planning and emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment. Effective management of men, money and material in a manufacturing operation. Prerequisite: None.

ISC-211 Time Study--Work Measurement**(3-2-4)**

This course covers the principles and practices of time study, work simplifications, and motion economy. Prerequisite: None.

Law Enforcement Technology

LET-100 Defense Tactics for EMS**(2-2-0-3)**

In this course, students are trained to predict, recognize and respond appropriately to a variety of dangerous or volatile situations which they are likely to encounter as emergency service responders. Defensive posture to confrontation is emphasized. Prerequisite: Departmental Approval.

LET-101 Introduction to Criminal Justice**(5-0-5)**

This course is designed to provide the student with a philosophy of criminal justice with its legal limitations in our society and the primary responsibilities of the various agencies of the criminal justice system. The basic processes of criminal justice are discussed. The student receives an orientation relative to job opportunities. Prerequisite: None.

LET-102 Introduction to Criminology**(5-0-5)**

A general course designed to introduce the student to the causation of crime and criminal deviant behavior. The course presents the problem of crime historically and the aspects of contemporary efforts to meet the social problems caused by criminal behavior. Prerequisite: None.

LET-105 Introduction to Correction**(4-0-4)**

Course examines the functional position of American corrections in the criminal justice system; the interrelationship of correction with the police and the courts. The history of corrections is considered as a societal response to deviance. Emphasis is given to the functioning of corrections as part of the criminal justice system and the need for cooperation between the various facets of the system. Court and institutional administration and the legal rights of inmates are covered. Prerequisite: None.

LET-106 Probation and Parole**(3-0-3)**

Institutional and non-institutional treatment of the offender considering modern philosophy and methods in treatment of adult criminals and juvenile delinquents in correctional institutions. Probation as a judicial process and parole as an executive function are examined, and community-based correctional programs and the use of pardon are studied. Prerequisite: None.

LET-107 Police Liability**(3-0-3)**

Theoretical and practical liability problems facing criminal justice practitioners and administrators. Emphasis entering on deadly force, excessive force, and nonlethal weapons. General policy and procedure development to include certification, training and restrictive use of special police equipment. Pursuit liability and off-duty problems will be included in discussion. Prerequisite: None.

LET-110 Introduction to Juvenile Justice (5-0-5)

A general survey of juvenile behavior considers individual and social problems; theories of delinquency causation, and methods of prevention and correction. The course presents a general overview of the Juvenile Court and the system of juvenile justice. Prerequisite: None.

LET-111 Defense Tactics (1-2-2)

This course presents the police role in physical arrests as a defensive role. The philosophy behind a defensive role will be discussed. Proper attitude, physical conditioning, and self-discipline will be emphasized. The student will be given instruction and practical application in arrest techniques, searches, control holds, and handcuffing. Prerequisite: None.

LET-112 Legal Research (5-0-5)

This course is designed to aid the student in legal research. Special attention will be placed on recent North Carolina and United States Supreme Court decisions that have major implications on the three components of the criminal justice system. Students will research cases and document findings for classroom presentation. Prerequisite: LET 101.

LET-115 Criminal Law I (3-0-3)

A course designed to present the concepts of criminal law and to provide a legal groundwork for those who seek to enter the criminal justice field. Prerequisite: None.

LET-116 Criminal Justice Internship (0-10-1)

Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. Prerequisite: Departmental Approval.

LET-125 Judicial Process (4-0-4)

This course provides the student with a review of court systems, procedures from incident to final disposition, principles of constitutional, federal, state, and civil laws as they apply to and affect law enforcement. Prerequisite: LET 101.

LET-200 Crime Prevention (3-0-3)

This course is designed to make the student aware of the many opportunities for law-breaking open to the potential criminal. Various types of preventive securities such as locks, lighting, alarms, neighborhood watch programs, public presentations on crime prevention to interested groups by the students, etc., will be studied. Prerequisite: None.

LET-201 Motor Vehicle Law (3-0-3)

A study of the traffic enforcement codes with primary emphasis placed on North Carolina Law as it relates to motor vehicles. Prerequisite: None.

LET-202 Traffic Planning and Management (3-2-4)

This study covers the topic of traffic management and enforcement giving an overview of problems as they exist today. Attention is given to legislation, organization of the traffic unit, responsibilities to the traffic function of the various units within the law enforcement agency, enforcement tactics, evaluation of the traffic program effectiveness, and allocation of personnel and materials. Accident investigation is stressed. Prerequisite: None.

LET-205 Criminal Evidence (4-0-4)

The kinds of legal evidence and the rules governing the admissibility of evidence in courts are explored in this course. Rules of evidence that apply in civil, criminal, and federal courts are discussed. Topics include: the hearsay rules, dying declarations, privileged communications, and the concepts of relevancy, competency and materiality. Prerequisite: LET 101.

LET-206 Community Relations (3-0-3)

This course provides the student with an understanding of community structure as they relate to minority groups, peer groups, socioeconomic groups, leader groups, and group relations. Emphasis is on the organization and function of these groups as they relate to the profession of criminal justice-protective service. Prerequisite: None.

LET-210 Criminal Investigation I (4-0-4)

This course introduces the student to fundamentals of investigation, crime scene search, recording, collection and preservation of evidence. Sources of information, interview and interrogation, case preparation, and court presentation will be discussed. Prerequisite: Departmental Approval.

LET-211 Introduction to Criminalistics (4-2-5)

A general survey of criminal investigation includes the methods and techniques used in modern scientific investigation of crime, with emphasis on the practical use of these modern methods by the student. Laboratory techniques will be demonstrated and the student will use the scientific laboratory equipment. Prerequisite: LET 210.

LET-212 Narcotics, Drugs, and Human Behavior (3-2-4)

This course familiarizes the student with North Carolina drug laws and introduces the identification and classification of dangerous drugs. Emphasis is on the various effects that the different drugs have on the human body and in the temperament of individuals. Prerequisite: Departmental Approval.

LET-213 Criminal Investigation II (4-0-4)

This is a continuation of LET 109 with emphasis on specific offenses such as homicide, burglary, robbery, larceny, narcotics, arson, and sex. Prerequisite: LET 210.

LET-216 Criminal Law II (3-0-3)

A continuation of LET 105 with emphasis on North Carolina Law. The course deals with the concept of criminal responsibility and competency; the law of arrest, and search and seizure; rights of arrested persons; and the laws governing wiretapping and electronic surveillance. The case book approach is used, with leading cases assigned as outside reading and for class discussion. Prerequisite: LET 115.

LET-217 Patrol Procedures (3-0-3)

This course includes methods of personnel distribution and assignment, operation of vehicles on patrol, answering calls of various types. It provides the opportunity to develop perception and observation concerning person, places, and things. Safe driving techniques and uses of equipment are presented. Prerequisite: Departmental Approval.

LET-220 Police Organization, Administration and Supervision (5-0-5)

Principles of organization and administration, personnel management and supervision, training, communication, records, property maintenance, and miscellaneous services are introduced. Prerequisite: None.

LET-250 Topics in Criminal Justice--Law Enforcement I (5-0-0-5)

This course provides credit for approved special education of college level beyond minimum standards (basic) training and outside the regular curriculum. All credit awarded by this method must be documented by the department chairperson. Prerequisite: Departmental Approval.

Mathematics

MAT-090 Guided Mathematics (5-0-5)

Topics include manipulation of fractions, decimals, ratios, proportions, percentages, signed numbers, and solution of basic linear equations in one variable. All operations will be modeled by applications in practical problems. In addition, the relationship between percentages, fractions, and decimals is covered. Prerequisite: None.

MAT-091 Plane Geometry (5-0-5)

Introduction to Plane Geometry including areas of plane figures, angles, volume, Pythagorean Theorem, elementary construction, proofs, right triangles, circles, lines, congruent triangles, polygons, and similarities. Prerequisite: MAT 093 or High School Algebra I.

MAT-093 Algebra I Review (5-0-5)

This one quarter review of Algebra I covers all topics in MAT-096/097. Designed for students who have successfully completed Algebra I and need review before attempting a higher level math course. Prerequisite: MAT 097, Placement Test, or High School Algebra I.

MAT-094 Algebra II Review (5-0-5)

A one quarter review of Algebra II which covers all topics in MAT-098/099. Designed for students who have successfully completed Algebra II and need review before attempting a higher level math course. Prerequisite: MAT 099, Placement Test, or High School Algebra II.

MAT-096 Algebra I, Part 1 (5-0-5)

This is the first of a two-course sequence covering addition, subtraction, multiplication, and division of integers, polynomials, and algebraic factors; simplification of fractions; solution and graphing of linear equations in one and two variables; solution of quadratic equations by radical expressions; and the Pythagorean Theorem. Prerequisite: None.

MAT-097 Algebra I, Part 2 (5-0-5)

This course is a continuation of MAT 096. Prerequisite: MAT 096.

MAT-098 Algebra II, Part 1 (5-0-5)

This is the first of a two-course sequence which continues Introductory Algebra I. Topics in Algebra I will be reviewed and extended. These topics will be added: absolute value equations and inequalities, fractional exponents, radicals having indices greater than 2, complex numbers, quadratic and rational inequalities, function and relations, and introductory trigonometry. Prerequisite: Mat 093, MAT 097, or Equivalent.

MAT-099 Algebra II, Part 2 (5-0-5)

This course is a continuation of MAT 098. Prerequisite: MAT 098.

MAT-101 Algebra and Trigonometry I (5-0-5)

Number systems of various bases are introduced. Fundamental algebra operations, and rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed. Prerequisite: Placement Test.

MAT-102 Algebra and Trigonometry II (5-0-5)

A continuation of MAT 101. Advanced algebraic and trigonometric topics include quadratics, logarithms, determinants, matrices, complex numbers, solution of oblique triangles and graphs of the trigonometric functions. Prerequisite: MAT 101.

MAT-103 Analytical Geometry and Calculus (5-0-5)

The fundamental concepts of analytical geometry, differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, the integral and basic integration techniques. Application of these concepts to practical situations are stressed. Prerequisite: MAT 102.

MAT-107 Calculus II (5-0-5)

This course covers techniques of integration; integration of transcendental functions; and applications of the definite integral. Prerequisite: MAT 103.

MAT-110 General College Mathematics (5-0-5)

This is a general college mathematics course. Topics include linear equations; operations with algebraic statements, systems of linear equations; computation using logarithms; introduction to statistical methods; ratio and proportion; applications. Prerequisite: Placement test.

MAT-111 Math for Real Estate (3-0-3)

This course is a review of the fundamental operations of arithmetic applied to rational numbers; practical applications of percent problems relating to real estate; ratio and proportion; and geometry relating to real estate. Prerequisite: None.

MAT-112 Mathematics of Finance (3-2-4)

This course consists of practical application of business financial transactions involving analysis of statements, interest, present value, yield, discount, compound interest, annuities, extinction of debt and depreciation. Use of modern calculating equipment will be employed. Prerequisite: MAT 101 or MAT 110.

MAT-150 Precalculus Mathematics (5-0-5)

This course consists of functions and graphs, linear and quadratic functions, polynomial and rational functions, exponential and logarithmic functions, and trigonometric identities. Prerequisite: MAT 102 or Satisfactory Score on the Math Placement Test.

MAT-151 Calculus I and Analytic Geometry (5-0-5)

Topics in analytic geometry, limits, derivatives, techniques of differentiation, applications, logarithms, exponential functions, and methods of integration are covered. Prerequisite: MAT 150 or Satisfactory Score on the Math Placement Test.

MAT-152 Calculus II (5-0-5)

Continuation of MAT 151, including work in the calculus of transcendental functions, methods of integration, areas, volumes, centroids, calculus of integration, and calculus of logarithmic and exponential functions. Prerequisite: MAT 151.

MAT-160 Elementary Statistics (5-0-5)

A study of statistical methods including fundamental statistical methods, basic statistical distributions, measures of central tendency and dispersion, statistical inference, and sampling techniques. Prerequisites: MAT 093 or MAT 097.

MAT-202 Calculus III (5-0-5)

Continuation of MAT 152, including further study in differential and integral calculus of polynomial, rational, logarithmic and exponential functions; partial derivatives; and multiple integration. Prerequisite: MAT 152.

MAT-203 Calculus IV (5-0-5)

Continuation of MAT 202, multi-variables, vector functions and their derivatives, complex numbers and functions and applications. Prerequisite: MAT 202.

MAT-204 Applied Mathematics (5-0-5)

A study of geometric principles and trigonometry as it relates to engineering and related shop applications. Emphasis will be placed on practical applications of geometric theorems, right triangle and oblique triangle trigonometry and dimensional analysis. Prerequisite: MAT 102.

MAT-1101 Fundamentals of Mathematics (5-0-0-5)

Analysis of Basic Operations: addition, subtraction, multiplication and division of whole numbers. Fractions, decimals, powers and roots, percentages, ratio and proportion. Introduction to algebra used in trades. Practical applications. Prerequisite: None.

MAT-1103 Geometry (3-0-0-3)

Fundamental properties and definitions, plane and solid geometric figures, selected general theorems, geometric construction, areas and volumes of solids. Geometric principles are applied to shop operations. Prerequisite: MAT 1101.

MAT-1104 Trigonometry (3-0-0-3)

Practical problems in trigonometry relating to machine shop are reviewed. Trigonometric ratios, solving problems with right triangles and solution of practical problems are covered in this course. Solution of oblique triangles will be introduced. Prerequisite: MAT 1103.

MAT-1123 Machinist Mathematics (3-0-0-3)

Introduces tapers and wedges, sine bar, dovetails, threads, angle cuts, hole-circle spacing, gears, and indexing with emphasis on application to the machine shop. Practical applications and problems furnish the trainee with experience in geometric propositions and trigonometric relations to shop problems. Prerequisite: MAT 1104.

MAT-1203 Trigonometry (3-0-0-3)

A basic review of mathematics will form a foundation for a study of trigonometry of right triangles, oblique triangles, and dimensional analysis. Applications to typical problems found in the tool, die and mold shop will be presented and solutions will be found by using mathematics. Prerequisite: MAT 1123.

MAT-1204 Compound Angles (3-0-0-3)

The application of trigonometry and geometry is presented to solve compound angle problems. This course will use as many practical problems as possible to enable the student to work with typical problems. Prerequisite: MAT 1203.

Mechanical Engineering Technology

MEC-101 Machine Processes (2-4-4)

A course to acquaint the student with basic machine tools of industry through lectures, demonstrations, and hands-on practice. It will include the study of safety practices; measuring instruments; characteristics of basic machine tools, materials, and cutting tools; and actual experience on lathe, drill press, milling machines, shaper, and grinder. Prerequisite: None.

MEC-105 Statics**(3-2-4)**

Concepts and basic principles of statics. Parallel concurrent, and non-current force systems in coplanar and noncoplanar situations. Concepts of friction. Prerequisites: MAT 102 and PHY 111.

MEC-110 Cooperative Work Experience**(0-0-30-3)**

Upon completing this course, students should be able to exhibit a positive attitude toward a career in Mechanical and Manufacturing Engineering Technologies. Students should also demonstrate a sufficient understanding of duties and tasks associated with these disciplines and be able to implement results of applied experience in both class and laboratory environments. Prerequisite: 50 Credit Hours Earned in Residence Toward an Engineering Technology Degree with a Minimum 2.5 GPA in the Major Area and Departmental Approval.

MEC-111 Manufacturing Processes I**(3-2-4)**

An introduction to the field of manufacturing processes; topics include the fundamentals of casting, metal forming, machining, metal joining, and processes related to manufacturing. Practical lab work stresses hands-on experience with commercially available machining and cutting tools, welding equipment and production materials. Laboratory exercises include industry field trips. Prerequisite: None.

MEC-112 Manufacturing Processes II**(2-4-4)**

Theory and application of industrial fabrication techniques; topics in polymer science and mold construction, assembly line layout, time and motion studies, and industrial safety are discussed. Prerequisite: MEC 111 or Departmental Approval.

MEC-137 Computer-Aided Machining II**(2-6-0-5)**

A continuation of advanced CNC programming in both mill and lathe which will prepare the student to create CNC code for more advanced geometry. This course will also include transferring part geometry from a CAD drawing and generating CNC code from which machined parts will be made. Prerequisite: MEC 173 or MEC 183.

MEC-172 Programming CNC Milling Machines**(2-2-0-3)**

An introduction to the programming of Computer Numerical Control milling machines. Looping macro subroutines, drill cycle, spotfacing cycle, deep hole drilling cycle, boring cycle, multi-hole row drilling cycle, inch dimension system, metric dimension system, facing cycle, pocket milling cycle, internal hole milling cycle and cutter diameter compensations will be areas of study. Safety and machine protection will be stressed at all times. Prerequisite: MEC 271 or Departmental Approval.

MEC-173 Advanced Programming for CNC Milling Machines**(2-2-0-3)**

A continuation of study in the programming of Computer Numerical Control equipment. Circular interpolation, multi-quadrant circular interpolation, polar coordinates, cutter path transformation, continuous path milling. CAM subroutines will be used in program study whenever feasible. Prerequisite: MEC 271. Corequisite: MEC 172.

MEC-182 Programming CNC Lathes**(2-2-0-3)**

An introduction to the programming of Computer Numerical Control lathes. Subroutines, drill cycle, deep hole drill cycle, boring cycle, inch-metric system, facing and rough turning cycles, tapers, threading, tool nose radius, and tool offsets will be the areas of study. Safety and machine protection will be stressed at all times. Prerequisite: MEC 270 or Departmental Approval.

MEC-183 Advanced Programming for CNC Lathes (2-2-0-3)

A continuation into the programming of CNC controls. Advanced turning, boring, tapering, and threading procedures will be studied. Programmable zero, cutter compensation and L, P, and R parameters will be used. Blueprint programming along with the conversational control should be introduced. Advanced programs, including most of the above, will be written during this course. Prerequisite: MEC 270. Corequisite: MEC 182.

MEC-205 Strength of Materials (3-2-4)

Study of the basic principles by which stresses and strains are induced in beams, members and structures by imposed loads. Analyses of stresses are made as applied to beams, columns, thin-walled cylinders, spheres, riveted and welded joints, and machine components. Prerequisite: MEC 105.

MEC-206 Dynamics (4-0-4)

Study of change of position or motion as it affects machines and their mechanical components. The subjects of mathematical vectors and kinematics used for design of mechanisms and cams, etc., are introduced. Dynamics formulae are presented and explained. Work problems are provided. Prerequisite: MEC 105.

MEC-208 Machine Design (3-4-5)

Upon completing this course, students should be able to complete a machine design project involving fasteners, permanent joints, shafts and couplings, bearings, belt and chain drives, gears, clutches and brakes, and springs. Designing machine parts will be based on form, function and strength of materials. Students will need to demonstrate proficient use of vendor catalogs and manuals in the selection of machine parts. All machine/product designs must be formally presented at the end of the quarter. Prerequisite: MEC 205.

MEC-210 Production Procedures (3-0-3-4)

A study of product planning and control, scheduling and routing of operations. Principles and techniques of quality control and cost savings, sampling inspections and graphs and charts are emphasized. Both statistical and dimensional quality control are reviewed as well as the different processes utilized in the production of metal component parts. Prerequisite: Departmental Approval.

MEC-211 Engineering Materials (3-2-4)

Upon completing this course students should be able to define physical and mechanical properties of materials; perform and evaluate standard tensile, impact, and hardness tests of metals, discuss the crystalline structure of metals and their characteristics; describe the effects of heat treating on ferrous metals, their production and the properties of ferrous and non-ferrous metals; enumerate the different heat treating processes, the equipment used and perform simple heat treating procedures; describe the properties of thermoplastic and thermosetting polymers and ceramic and composite materials; and discuss material selection on the basis of specific properties. Laboratory exercises include industry field trips. Prerequisite: None.

MEC-212 Automation I (4-4-6)

Upon completing this course students should be able to describe the function of industrial robotics and automation; understand the operating principles of hydraulic and pneumatic controls, electronic control loop characteristics using programmable logic controllers, input and output devices; explain concepts and applications of servo systems; program plc's using both statement list and ladder logic formats. Prerequisite: MEC 235 or Departmental Approval.

MEC-213 Machine Design**(2-2-3)**

Study of factors affecting the design and selection of machine elements and components. Applications of principles of mechanics, properties of materials, and manufacturing processes fundamental to the design of machine components will be included. Prerequisite: MEC 205.

MEC-214 Automation II**(3-6-6)**

Upon completing this course students should be able to describe and select industrial robots for various automated manufacturing applications; design and program a typical robotic pick and place machine; understand concepts of automated work cells involving flexible manufacturing systems and hard automation, and computer aided manufacturing; and identify assembly techniques for increasing productivity through the application of automated manufacturing technology. Prerequisite: MEC 212 or Departmental Approval.

MEC-216 Vibrational Analysis and Preventive Maintenance**(4-4-6)**

Upon completing this course students should be able to describe the principles and theories that underlie simple mechanical vibrations; discuss machine design operating characteristics such as RPM, type of bearings, gear frequencies, aerodynamic/hydraulic frequencies etc.; select appropriate vibration meters, vibration analyzers, oscilloscopes, measurement transducers, and accelerometers for specific application and demonstrate a good understanding of instrumentation; demonstrate knowledge of data interpretation and diagnose machinery vibration; and perform dynamic balancing on industrial machinery. Prerequisite: MEC 206 or Departmental Approval.

MEC-228 HVAC Motor Controls**(1-4-3)**

Upon completing this course students should be able to exhibit skills necessary to perform installation and troubleshooting on the types of motor control centers found in industrial plants, commercial and residential building. Topics include basic functions common to all single and three phase motor controls, fault protection, visible disconnects, overload protection, single and three phase motor connections, full-voltage non-reversing starters, wye and delta starters, basic control logic basic protective relay logic, electromechanical control relays, motor contactors, disconnect switches, circuit breakers, and temperature effects on motors and safety factors. Prerequisite: None.

MEC-230 Industrial Motor Controls**(4-2-5)**

Upon completing this course students should be able to exhibit skills necessary perform installation and troubleshooting on the types of switchboards, power switchgear or motor control center found in industrial plants or commercial buildings. Topics include basic functions common to all motor controls, fault protection, visible disconnects, overload protection, full-voltage non-reversing starters, various reduced voltage starters, basic control logic, basic protective relay logic electromechanical control relay, solid-state control relays, motor contactors, disconnect switches, and circuit breakers. Prerequisite: None.

MEC-235 Hydraulics and Pneumatics**(3-2-4)**

Upon completing this course students should be able to exhibit a knowledgeable understanding of basic theories of hydrostatic, hydrodynamic, and pneumatic systems; perform basic computations related to industrial hydraulic and pneumatic designs; sketch symbols and explain their use; design and trouble shoot simple circuits using fluid power pumps and motors, cylinders, fluid reservoirs, plumbing and related control components, and filtration devices. Laboratory exercises include industry field trips. Prerequisite: MAT 101. Corequisite: PHY 111 or Departmental Approval.

MEC-270 CNC Lathe Operations (1-0-3-2)

An introduction to the setup and operation of the CNC turning centers. Concepts, capabilities and applications of turning centers will be explored. Equipment descriptions, operator controls, data input and manipulation, tooling and machine protections will be stressed. Students will study current equipment similarities and differences, and will be encouraged to incorporate machines they may operate in their workplace. Operator safety and equipment protection will be strongly emphasized. Prerequisite: Departmental Approval.

MEC-271 CNC Milling Operations (1-0-3-2)

An introduction to the setup and operation of CNC mills or machining centers. Concepts, capabilities and applications of machining centers will be explored. Equipment descriptions, operator controls, data entry and manipulation, tooling and machine protection will be stressed. Students will study current equipment similarities and differences and will be encouraged to incorporate machines they may operate in their workplace. Operator safety and equipment protection will be strongly emphasized. Prerequisite: Departmental Approval.

MEC-1101 Elementary Hydraulic Principles (2-3-0-3)

Students will be introduced to the principles of hydraulic systems as they apply in the heavy equipment area. The theory of hydraulic systems must be understood thoroughly before the students can progress into actual work on hydraulic systems. Various aspects of heavy equipment will be used to demonstrate these principles and theories. Prerequisite: None.

MEC-1115 Treatment of Ferrous & Non-Ferrous Metals (1-0-3-2)

Investigates the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, and cast iron will be topics for study. Prerequisite: None.

MEC-1124 Metallurgy (3-0-0-3)

An introductory course in metallurgy, a basic study of properties of metals and alloys and their purpose, standards and classification, heat treatment, and troubleshooting. A thorough knowledge of the effects of heating and cooling is very essential to the welding student. Prerequisite: None.

MEC-1203 Metallurgy (3-0-0-3)

This is a study of a special group of steels used by the tool, die and mold making industry. Students are concerned with the selection, machining, and heat treating of these steels. Troubleshooting to find the reason for possible failure of the steel and the remedy required will be an important part of this course. Prerequisite: None.

MEC-1209 Hydraulics and Pneumatics (3-0-0-3)

A basic study of the principles of power hydraulics. Component parts such as reservoirs, strainers, filters, piping and fittings, motors, pumps, and valves will be thoroughly studied. Practical circuits and systems will be covered especially as they are used in the tool, die and mold making industry. Prerequisite: None.

Machinist

***MES-1101 Machine Shop I (3-0-12-7)**

An introduction to the metalworking trade as it relates to machining operations. The student will be oriented to the machine shop, safety, basic hand tools, and shop measuring instruments. Operations on engine lathes, drilling machines, metal cutting saws, milling machines, and bench grinders will also be covered. Corequisites: BPR 1104 and MAT 1101.

***MES-1102 Machine Shop II (3-0-12-7)**

Advanced operations in the use of layout tools, power sawing, drill presses, and milling machines. Students are introduced to the basic operations on grinders. Projects selected will encompass all the operations, tools, and procedures used thus far and those to be stressed during the course. Prerequisite: MES 1101. Prerequisites or Corequisites: BPR 1105 and MAT 1103.

***MES-1103 Machine Shop III (3-0-12-7)**

Additional instruction and practice in the use of precision measuring tools, lathes, milling machines, and grinders. Practice in setting up and operating machine tools will include the selection and use of workholding devices, speeds and feeds, special heads and tables, cutting tools, and coolants. Instruction and practice in the use of power feed drills. Prerequisite: MES 1102. Prerequisites or Corequisites: BPR 1106 and MAT 1104.

***MES-1104 Machine Shop IV (2-0-6-4)**

An introduction to advanced and special machining operations. The student will work to specified tolerances in setting up and operating machine tools. Grinding operations using surface, cylindrical, and centerless grinders will be covered. Prerequisite: MES 1103. Prerequisites or Corequisite: MAT 1123.

***MES-1112 Machine Shop Processes (1-0-3-2)**

An introduction to machine shop dealing with the identification, care and use of basic hand tool and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice. Prerequisite: None.

MES-1136 Computer-Aided Machining (2-6-0-5)

A study of computer-aided machining using off-line computers and CAM software to prepare a drawing of simple parts and generate the numerical control codes necessary to machine parts on a CNC vertical milling machine or lathe. Each student will prepare job plans, make a tooling file, describe the part and generate CNC codes. These code files will be transferred to the appropriate machine tool where the part will be made. Prerequisite: MES 1170 or departmental approval.

MES-1170 Introduction to CNC Machining (1-2-0-2)

An introduction to the set-up, operation and programming of Numerical Control and Computer Numerical Control machine tools. Concepts, capabilities, and applications of CNC machining are to be explored. Equipment descriptions, operator controls, data input, program preparation and storage will be studied. Students will gain skills in manual parts programming, setup and operation of CNC machines. Operator safety and machine protection will be stressed. Prerequisite: None.

MES-1171 Operation of CNC Machines (2-2-0-3)

An introduction to the setup and operation of Computer Numerical Control machine tools. Computer Numerical Control description, operator controls and indicators, operation in setup, data input, automatic operation, and tool holders will be areas of study. Safety and machine protection will be stressed at all times. Prerequisite: MES 1102 and MES 1170.

Medical Laboratory Technology

MLT-107 Clinical Chemistry I (3-0-0-3)

A study of the biochemical processes involved in human metabolism, particularly carbohydrates and proteins. The study involves emphasis on methodologies used in the clinical chemistry laboratory. Prerequisite: None

MLT-112 Clinical Chemistry II (3-0-0-3)

A continuation of MLT 107, Clinical Chemistry I, concentrating on electrolytes, blood gases, enzymes, and hormones. Prerequisite: MLT 107.

MLT-114 Immunohematology I (3-2-0-4)

Principles and theories of immunology and immunohematology including serology, blood group antigens and antibodies. Prerequisite: None.

MLT-118 Immunohematology II (1-2-0-2)

A continuation of Immunohematology I with an introduction to the selection and processing of donors, preparation and use of blood and blood components, special immunohematology conditions and methodologies. Prerequisite: MLT 114.

MLT-122 Hematology I (2-4-0-4)

An introduction to the field of Medical Laboratory Technology. Methods and theory of specimen collection (phlebotomy) are introduced. A study of the formed elements of blood. Normal and abnormal values, and tests for determining them. Preparation and examination of normal blood smears. Prerequisite: None.

MLT-123 Microbiology I (3-2-0-4)

An introduction to the routine techniques of clinical microbiology and a study of the methods used for the isolation and identification of the medically important bacteria. Prerequisite: None.

MLT-124 Hematology II (1-4-0-3)

A continuation of Hematology I with an emphasis on Leukocytes, platelets, and the examination of blood smears. An introduction to erythrocyte and leukocyte abnormalities is covered. Hemostasis theory and screening tests for hemostasis are studied. Prerequisite: MLT 122.

MLT-125 Microbiology II (3-2-0-4)

A continuation of MLT 123 with the addition of the study of methods used for the isolation and identification of mycobacteria, medically important fungi, and antimicrobial susceptibility testing. Prerequisite: MLT 123.

MLT-126 Urinalysis/Parasitology (2-4-0-4)

A study of human parasites with practice in techniques used in identifying parasites in feces and other body specimens. A study of the formation of urine and urinalysis with emphasis on the role urinalysis plays in the diagnosis of disease. Prerequisite: BIO 101.

MLT-211 Instrumentation (2-0-0-2)

A study of the operating principles and methodologies of laboratory instruments including routine maintenance and quality control. Field trips to various health facilities and industries will be included. Prerequisite: MLT 112

MLT-218 CLA-MLT Transition I (4-0-0-4)

A course to serve as an academic refresher in microbiology, parasitology, immunohematology, and serology. Prerequisite: None.

MLT-219 CLA-MLT Transition II**(3-0-0-3)**

A course to serve as an academic refresher in chemistry, urinalysis, hematology and coagulation. Prerequisite: None.

*** MLT-220, 221, 222 and 223**

Because of clinical space restrictions, students will have individual schedules for MLT Clinical Experiences. As assigned by the department chairperson, students will register for the following courses. During each student's first clinical experience course general hospital orientation will be covered. Prerequisites: BIO 102, CHM 201, all 100 Level MLT Courses, and Clinical Approval.

*** MLT-220 Hematology Clinical Experience****(0-0-30-10)**

Supervised clinical experience with practical application of laboratory skills during rotation through clinical hematology.

*** MLT-221 Chemistry Clinical Experience****(0-0-30-10)**

Supervised clinical experience with practical application of laboratory skills during rotation through clinical chemistry.

*** MLT-222 Microbiology Clinical Experience****(0-0-30-10)**

Supervised clinical experience with practical application of laboratory skills during rotation through clinical microbiology.

*** MLT-223 Immunohematology Clinical Experience****(0-0-30-10)**

Supervised clinical experience with practical application of laboratory skills during rotation through clinical immunohematology.

Music

MUS-101 Introduction to Music**(3-0-3)**

A survey of music history and appreciation with emphasis on understanding music in its historical context, its various forms and masterpieces. Prerequisite: None.

Associate Degree Nursing

NUR-100 Transition to Associate Degree Nursing**(2-0-0-2)**

Transition course required by LPNs accepted into NUR 105. Student compares role of RN to LPN practice and gains experience with five-step nursing process. Prerequisite: Admission to the ADN Program and documented completion of Practical Nursing Program.

NUR-101 Fundamentals of Nursing I**(3-6-0-6)**

This course provides an introduction to basic concepts of health and the role of the Associate Degree Nurse as a member of the contemporary health team. Emphasis is placed upon basic human needs and the concept of biopsychosocial adaptation throughout the life span. The nursing process is introduced as a means of planning and implementing care. Medical terminology is integrated throughout. Concurrent laboratory experience provides the opportunity for developing competencies in basic nursing skills. Prerequisite: CPR Certification, Completed Health Forms, and Documentation of Immunizations.

***NUR-103 Fundamentals of Nursing II (5-0-9-8)**

This course centers around the principles of homeostasis and the concept of adaptation. The student learns about broad groups of therapeutic agents, gains proficiency in dosage calculations, and learns principles of administering therapeutic agents by various routes to adult and pediatric clients. Also included is the study of the body's fluid distribution and normal ranges and functions of the various electrolytes. Clinical experiences in acute care and long-term care facilities provide the opportunity for the student to implement basic nursing care, administer medications, and monitor intravenous fluid administrations. Prerequisites: BIO 101, CHM 101, NUR 101, NUT 101, and CPR Certification.

***NUR-105 Fundamentals of Nursing III (5-0-9-8)**

This course includes basic physical assessment of adult and pediatric clients with emphasis on normal findings. Consideration is given to client's inability to adapt in various pathologies and progresses to a study of immune disorders, neoplasms, hematological dysfunction, and gastrointestinal dysfunctions. In the laboratory, the student learns basic techniques for physical assessment, gastrointestinal intubation, colostomy care, and venipuncture. In the hospital setting, the student adapts care to meet needs of individual clients with common health problems. Prerequisites: BIO 102, NUR 103 (or Practical Nurse License and Admission to the ADN Program), and CPR Certification.

***NUR-206 Psychiatric Nursing (4-0-6-6)**

In this course, the fundamental dynamic concepts of the mind and mental health, the agencies of the mind, and personality adjustment mechanisms are reviewed as a background for the study of the mental disorders. Emphasis is placed upon symptomatology and treatment and especially upon the related nursing care. Principles of a therapeutic nurse-patient relationship are learned, and an opportunity to apply them is provided in a local psychiatric setting. Prerequisites: NUR 105 and PSY 203.

***NUR-207 Maternity Nursing (4-0-6-6)**

Maternity nursing is designed to allow the student to assess needs, plan, implement, and evaluate care for clients during the prenatal, intrapartal, and postpartal periods of reproduction. Emphasis is placed on the family-centered approach to maternal-child care. Subject material focuses on the normal biopsychosocial adaptations concurrent with the child-bearing process with briefer considerations given to major maladaptive processes. Throughout the course the student is assisted in the acquisition of knowledge and skills necessary for the promotion of comfort, health, and safety of the child-bearing family. Supervised clinical experiences provide opportunities for students to relate knowledge and acquire nursing skills related to labor and delivery and postpartal and newborn care. The family-centered approach to the client care is emphasized throughout. Prerequisites: BIO 103, NUR 105, and Infant, Child, and Adult CPR Certification. Prerequisite or Corequisite: PSY 105.

***NUR-210 Medical Surgical Nursing I (7-0-15-12)**

This course is designed to guide the student in acquiring knowledge and skills in order to meet the physical, psychological and social needs of the adult and pediatric client with respiratory and cardiovascular problems. The student utilizes the nursing process in caring for clients with respiratory and cardiovascular problems in various clinical settings. Prerequisites: NUR 206, NUR 207, PSY 105, and Infant, Child, and Adult CPR Certification.

***NUR-211 Nursing Seminar I (3-0-0-3)**

Attention is given to the history and organizational structure of nursing and to the development of the new graduate's responsibilities and opportunities in the area of employment, involvement in continuing education, and the relationship of the ADN graduate to the health team members. Prerequisite: NUR 210.

***NUR-212 Medical Surgical Nursing II (7-0-15-12)**

This course is designed to guide the student in acquiring knowledge and skills to meet the physical, psychological and social needs of the adult and pediatric clients with problems involving metabolic processes from the availability of nutrients to the excretion of waste materials. Through selected adult and pediatric experience, the student is given the opportunity to utilize the nursing process in implementing care. Prerequisite: NUR 210 and Infant, Child, and Adult CPR Certification.

***NUR-213 Nursing Seminar II (0-2-0-1)**

The purpose of this course of study is to help students utilize principles of management in implementing the nursing process for individuals and groups. The leadership role and various methods of managing client care are emphasized. Prerequisite: NUR 212.

***NUR-214 Medical Surgical Nursing III (8-0-18-14)**

This course is designed to assist the student in acquiring knowledge and skills in order to meet the physical, social and psychological needs of adult and pediatric clients with sensorineural and musculoskeletal dysfunction. Clinical experiences provide an opportunity for the students to utilize concurrent and previously acquired knowledge and skills in managing care for groups of clients. Prerequisite: NUR 212 and Infant, Child, and Adult CPR Certification.

Nutrition

***NUT-100 Nutrition: Culinary (3-0-0-3)**

A study of basic nutritional principles and their relationship to human health, including basic guidelines for maximizing the nutritional quality of quantity food preparation. Prerequisite: None.

NUT-101 Nutrition (3-0-0-3)

A study of basic nutritional principles and their relationship to human need and adaptation. The course begins with fundamental components of food and their relationship to normal basic needs. It continues with meeting nutritional needs of individuals at various stages of the life cycle and the individual response to food, both physiological and psychological as altered by the disease state. Prerequisite: None.

General Office Technology

OTC-100 Spelling and Punctuation Study (3-0-3)

A course designed to help the student overcome spelling difficulties and build punctuation skills. Concentration will be placed on rules of spelling, use of the dictionary, and punctuation study. Prerequisite: ENG 101 or ENG 111.

OTC-110 Practical Office English (5-0-5)

This course gives the office technologist practice in the rudiments of fundamental English, including punctuation, capitalization, sentence structure, spelling, syllabication and proof-reading of typewritten work. It incorporates the use of office reference books in conjunction with office-related practice materials. Prerequisites: AOT 101 and OTC 100.

***OTC-218 Cooperative Education (0-20-2)**

In order to receive credit for OTC 218, the student must secure and successfully complete 220 hours of actual employment in a job approved by the instructor. This experience will allow the student to apply skills learned in curriculum courses to on-the-job work experiences. Prerequisite: Successful Completion of All Course Work.

OTC-272 Vocabulary Building (2-0-2)

The expansion of the student's active and passive vocabularies is the major goal of this course, with special emphasis given to the vocabulary of business. The study of prefixes, suffixes, root words, synonyms, and homonyms provides the basis for an introduction to selected new words and the foundation for growth in the use of new words and the determination of meanings of previously unknown words. Prerequisite: None.

Phlebotomy

PBT-1101 Basic Concepts in Phlebotomy (9-2-0-10)

Basic concepts in the areas of health care delivery systems, anatomy and physiology, collection equipment, blood collection procedures, infection control, specimen processing, quality control and safety are presented. Corequisite: PBT 1102.

PBT-1102 Phlebotomy Clinical Experience (0-0-12-4)

Performance of venipuncture and microcollection techniques in a clinical facility. Instruction in the use of computers for data necessary for performance of phlebotomy procedures. Corequisite: PBT 1101.

Health and Physical Education

PED classes may not be audited.

PED-101 Beginner Tennis (0-3-1)

Designed to give beginners a thorough knowledge of the history, rules, and strategy as well as the fundamental skills of tennis. Prerequisite: None.

PED-102 Intermediate Tennis (0-3-1)

A follow-up course to PED 101 with emphasis on game strategy and doubles play. Prerequisite: PED 101 or Departmental Approval.

PED-103 Advanced Tennis (0-3-1)

Designed to provide students with an opportunity to place into practice the skills developed in PED 101 and PED 102. Emphasis is placed on the ability to perform advanced shots, spins, pace, and strategy. Prerequisite: PED 102 or Departmental Approval.

PED-105 Beginner Bowling (0-3-1)

The fundamentals of ball selection, grips, stance, and delivery are taught along with rules, history, scoring, and the general theory of space coverage. Prerequisite: None.

PED-106 Intermediate Bowling (0-3-1)

Provides an opportunity to practice the knowledge and skills acquired in PED 105. Instruction is supplemented through films and participation at bowling lanes. Prerequisite: PED 105 or Departmental Approval.

PED-115 Beginner Golf (0-3-1)

A course designed for teaching beginners the grip, stance, swing, and use of the various clubs, along with history and etiquette of play. Prerequisite: None.

PED-116 Intermediate Golf (0-3-1)

Emphasis is placed on rules and etiquette, procedures for playing and the swings involved. Playing time at local courses is included. Prerequisite: PED 115 or Departmental Approval.

PED-120 Beginner Volleyball (0-3-1)

Designed to include the fundamental skills, history, and strategy of the game. Prerequisite: None.

PED-121 Intermediate Volleyball (0-3-1)

The development of the necessary skills and strategies for playing volleyball. Emphasis is placed on proper techniques of play and development of basic skills used in playing. Prerequisite: PED 120 or Departmental Approval.

PED-125 Beginner Basketball (0-3-1)

Designed to teach the history, rules, and strategy as well as the fundamental skills of basketball. Prerequisite: None.

PED-126 Intermediate Basketball (0-3-1)

Emphasizes physical conditioning and the necessary skills for participation in basketball games. Prerequisite: PED 125 or Departmental Approval.

PED-130 Beginner Physical Fitness (0-3-1)

Designed to develop the ability to demonstrate vigorous physical action. It includes endurance, power, strength, and agility with the purpose of continuing these traits into smooth, effective action both at work and in play. Prerequisite: None.

PED-131 Intermediate Physical Fitness (0-3-1)

A continuation of PED 130 and is designed to direct the student in a program of physical development and coordinated movement. Prerequisite: PED 130 or Departmental Approval.

PED-132 Advanced Physical Fitness (0-3-1)

A follow-up course to PED 131 with greater emphasis on rhythmic activity and emphasis on a planned program for future fitness. Prerequisite: PED 131 or Departmental Approval.

PED-133 Aerobics I (0-3-1)

This course is designed to improve cardiovascular endurance and enable students to participate in a physical conditioning program that combines movement with music. Prerequisite: None.

PED-134 Aerobics II (0-3-1)

This course is a follow-up to PED 133 in which students will continue a physical conditioning program that combines movement with music. Prerequisite: PED 133 or Departmental Approval.

PED-135 Nature Hiking (1-2-2)

Study includes instruction on how to equip and care for oneself on the trail, including clothing, hygiene, and necessary equipment. Trail hikes will be taken to practice learned knowledge. Prerequisite: None.

PED-136 Walk-Jog-Run (0-3-1)

This course prepares students to participate in a developmental fitness program through walking, jogging, or running. Conditioning exercises, nutrition, stretching, fluid needs, and injury prevention are topics of discussion. Prerequisite: None.

PED-137 Bench Aerobics (0-3-1)

This course is a continuation of the practice and study of physical conditioning introduced in PED 133 and 134 involving cardiovascular conditional through low to no impact step aerobics. A step aerobics bench will be utilized in combining low joint stress movement with music along with some upper body conditioning. Prerequisite: PED 133 or PED 134, or Departmental Approval.

PED-140 Beginner Softball (0-3-1)

Designed to include the fundamental skills, history, and rules of the game. Prerequisite: None.

PED-141 Intermediate Softball (0-3-1)

Includes the development of necessary skills and knowledge for playing softball with emphasis on proper techniques and strategies for playing softball. Prerequisite: PED 140 or Departmental Approval.

PED-145 Fundamental Sports (1-2-2)

Designed for students who desire participation in a variety of sports activities including basketball, volleyball, archery, badminton, tennis, softball, gymnastics, fitness, bowling, and golf. Emphasis is placed on acquainting the students with the rules and knowledge of each activity so that participation in sports will be encouraged. Prerequisite: None.

PED-150 Beginner Gymnastics (0-3-1)

Teaches the fundamentals of gymnastics on the parallel bars and mats. Prerequisite: None.

PED-160 Beginner Weight Training (0-3-1)

The course presents the basic skills of body development through weight training. Prerequisite: None.

PED-161 Advanced Weight Training (0-3-1)

A continuation of the principles learned in PED 160. The student should gain knowledge of the principles of strength development and improve physically. Prerequisite: PED 160 or Departmental Approval.

PED-163 Body Sculpting (0-3-1)

Body sculpting is a course designed to improve physical strength, endurance and body awareness through use of small hand held weights and resistance bands while focusing on specific muscle groups. A 12-minute cardiovascular fitness phase and some flexibility training will be included in each class. Prerequisite: None.

PED-170 Fit and Well for Life (1-2-2)

Content of this course emphasizes wellness through the study of nutrition, weight control, stress management, substance abuse, and consumer facts on exercise and fitness. The student is taught to plan a personal lifelong fitness program based on individual need, abilities, and interests. Prerequisite: None.

PED-171 Modern Dance**(0-3-1)**

Dance is emphasized as an art form and physical activity. Basic dance patterns and designs, terminology and etiquette, elements of composition for expressive, creative, rhythmic movements. The course stresses the basic fundamentals of body movement executed to music. Prerequisite: None.

PED-172 Stretch and Tone**(0-3-1)**

This is a course designed to improve muscle tone, cardiovascular fitness and body awareness. Standing and floor stretches are combined with toning exercises to promote flexibility, range of motion and body shaping. A low intensity aerobic phases is included for developing cardiovascular fitness while decreasing joint stress. Correct form and functional understanding of injury prevention are stressed. Prerequisite: None.

PED-177 CPR/First Aid and Safety**((1-2-2)**

The theory and practice of basic first aid, cardiopulmonary resuscitation, and the care and prevention of injuries are presented. The course involves the theory and skills to implement basic cardiac life support following cardiac arrest. Emphasis is placed on related safety consciousness and the education and prevention aspects of controlling cardiovascular disease. Leads to Red Cross First Aid and Safety Certificate and to Adult, Child, and Infant CPR Certification. Prerequisite: None.

PED-180 Personal Health and Wellness**(3-0-3)**

Emphasis is placed on achieving personal wellness. Focus is on nutrition, weight control, fitness, sexuality, drugs, environmental health, and stress related diseases. Information and behavior necessary to approach health and wellness scientifically and to develop confidence in judgments affecting personal health and wellness. Prerequisite: None.

PED-190 Adapted Physical Fitness**(0-3-1)**

Adapted physical fitness is a course designed to improve physical strength, endurance and range of motion while focusing on individual needs. Exercises are designed and adapted to serve those persons with special needs or handicapping conditions while improving physical fitness, body awareness and independent living. Prerequisite: None.

Philosophy

PHI-101 Ethics and Human Values**(3-0-3)**

This course focuses on the use of reason as a guide in value-making and ethical decisions. The course centers on making moral decisions, resolving moral dilemmas, and examining various schools of ethical thought. Specific moral problems will be examined. Prerequisite: None.

PHI-102 Introduction to Philosophy**(3-0-3)**

Basic concepts and problems of philosophy including readings from both classical and contemporary philosophers. Topics include introduction to inductive and deductive logic, freedom and determinism, mind-body interaction, moral judgments, and the nature of knowledge. Prerequisite: None.

PHI-103 History of Western Philosophy**(3-0-3)**

American, European, and other Western philosophic movements with emphasis on distinctly Western philosophies such as pragmatism, realism, and humanism. Prerequisite: None.

PHI-200 Religions of the World (3-0-3)

A comparative survey course of world religions including the philosophical implications of religious experience and the development and different forms of the issues of belief and reason in modern thought. Prerequisite: PHI 102.

Photography

PHO-201 Introduction to Photography (1-2-2)

Instruction includes the processing and printing of film, photographing scenes, examining legal aspects of crime photography, preparing of courtroom photo evidence, lighting at a crime scene, caring for photographic equipment. Prerequisite: None.

Physics

PHY-105 Introduction to Physics (4-0-4)

This course introduces the student to the basic principles of electrical and radiation physics. It begins with a review of basic mathematics to include unit conversions. The fundamentals of mechanics, properties of matter, heat, atomic structure, electromagnetic radiation, electricity, and magnetism are presented. Finally, the fundamentals of x-ray generation and circuitry will be presented. Prerequisite: None.

PHY-107 Descriptive Astronomy (3-2-4)

This course is an introduction to the concepts of astronomy and the techniques of astronomical observation. Subjects include the Earth-Moon system, the solar system, the Sun and stellar physics, the Milky Way and other galaxies, and cosmological models of the Universe. Prerequisite: None.

PHY-108 Physics For Nonscience Majors (3-2-4)

This course is intended for nonscience majors and consists of brief explanations and demonstrations of basic physical principles of motion, gravitational forces, Newton's Laws of Motion, rotational equilibrium, mechanical properties of matter, thermal properties of matter, heat transfer, sound, electricity, magnetism, and light. Prerequisite: None.

PHY-110 Physics and Math Methods for MLT (3-0-3)

This course covers the mathematics and physical concepts that are applicable to medical laboratory technology. Subjects include number systems and arithmetic, algebra and ratio and proportion, the metric system, temperature conversions, graphing, statistical analysis, rotational physics and the centrifuge, electric charges and electrical currents in conductors and ionic solutions, nature and characteristics of light, various types of nuclear radiation and their uses. Prerequisite: None.

PHY-111 Physics I--Mechanics (3-2-4)

This is an algebra-based course. Topics include scalars, vectors, units, metric system, translational motion, forces, Newton's Laws, work energy, linear momentum, and collisions. Prerequisite: MAT 101.

PHY-112 Physics II--Rotation and Matter (3-2-4)

This is an algebra-based course. Topics include rotational motion, torques, rotational work and energy, angular momentum, mechanical properties of matter, thermal properties of matter, and thermodynamics. Prerequisite: PHY 111.

PHY-113 Physics III--Electricity and Magnetism (3-2-4)

This is an algebra-based course. Topics include electric forces, electric fields, electric energy, electric potentials, capacitance, current, resistance, direct current circuits, magnetism, electromagnetic induction, and alternating current circuits. Prerequisite: PHY 111 or Departmental Approval.

PHY-114 Physics IV--Light, Sound, and Wave Phenomena (3-2-4)

This is an algebra-based course. Topics include vibrations, waves, sound, electromagnetic waves, light, wave optics, and topics in modern physics based on wave phenomena. Prerequisite: PHY 111 or Departmental Approval.

PHY-201 General Physics I (3-2-4)

The first of three calculus-based physics courses. Topics include measurement of physical quantities, one dimensional motion, vectors, two dimensional motion, forces, work, energy, momentum, circular motion, rotational motion, torques, moments of inertia, rotational Kinetic energy and angular momentum. Prerequisite: MAT 151 or MAT 103 with Corequisite: MAT 151.

PHY-202 General Physics II (3-2-4)

The second of three calculus-based physics courses. Topics include scillatory motion, mechanical properties of matter, thermal properties of matter, Kinetic theory of matter, thermodynamics, electric forces, electric fields, electric potentials, electric properties of matter, capacitance, current, resistance and direct current circuits. Prerequisite: PHY 201. Corequisite MAT 152.

PHY-203 General Physics III (3-2-4)

The third of three calculus-based physics sources. Topics include magnetic forces, magnetic fields, magnetic properties of matter, electromagnetic induction, inductance, mechanical waves, sound waves, electromagnetic waves and light waves. Prerequisite: PHY 202.

PHY-1100 Industrial Science (3-2-0-4)

An introduction to physical principles and their application in industry. Topics in this course include properties of matter, basic electrical principles, heat, principles of force, motion, work energy, and power. Prerequisite: MAT 1101.

PHY-1101 Applied Science I (3-2-0-4)

An introduction to physical principles and their application in industry. Topics in this course include measurement, properties of solids, liquids, and gases; basic electrical principles. Prerequisite: MAT 1101.

PHY-1102 Applied Science II (3-2-0-4)

The second in a series of two courses of applied physical principles. Topics introduced in this course are heat and thermometry, and principles of force, motion, work, energy, and power. Prerequisites: PHY 1101.

Practical Nursing

PNE-1112 Fundamentals of Nursing (6-2-2-8)

This course provides an introduction to the care of the patient through a study of the basic needs of all persons in health or in illness. The nursing process is the basis for learning the principles of nursing. Basic skills for meeting the patient's needs are developed in lab practice and by performance in the clinical setting. Prerequisite: None.

PNE-1113 Pharmacology (2-0-0-2)

Sources, effects, legalities and usage of drugs as therapeutic agents, prescriptions of medications, drug classifications and nursing implications are taught in this course. The student gains proficiency in utilizing the apothecary metric system conversion in determining dosage and administering medications by the various route to patients. The student gains the ability to implement the nursing process as it relates to the administration of medications. Prerequisite: Departmental Approval.

***PNE-1120 Clinical I Medical-Surgical (0-0-15-5)**

This portion of the program consists of care of selected patients in the hospital. Careful supervision is given the student to insure maximum opportunity to develop nursing skills. Assignments are correlated to classroom instruction with emphasis on total patient care. Prerequisites: BIO 111, NUT 101, PNE 1112, PNE 1113, and CPR Certification. Corequisite: PNE 1122 or Departmental Approval.

***PNE-1122 Medical-Surgical Nursing I (8-0-0-8)**

This course is a beginning study of illness conditions. Emphasis is placed on the assessment of adult patients' needs and in the planning, implementing and evaluating of their care. Therapeutic intervention pertinent to disorders of the musculoskeletal system and the female reproductive system as well a study of infectious diseases, cancer, and pre- and post-operative care and disorders of the immune system are taught in this course. Principles and skills related to intravenous therapy are introduced. Prerequisites: BIO 111, NUT 101, PNE 1112, and PNE 1113. Corequisite: PNE 1120 or Departmental Approval.

***PNE-1123 Maternal and Newborn Care (4-0-0-4)**

This course is designed to present a family-centered approach as the theoretical basis for this course. Emphasis is placed on assessment of the female during the normal antepartum, labor and delivery, and post-partum stages as well as the needs of the normal newborn and in the planning, implementing and evaluating of their care. Also included is a theoretical overview of common complications of the maternal cycle with a brief consideration given to the newborn. Drug therapy is correlated with an appropriate course content. Prerequisite: BIO 111. Prerequisite or Corequisite: PSY 105.

***PNE-1130 Clinical II Maternal-Newborn and Medical-Surgical Nursing (0-0-18-6)**

This course is planned to give the student opportunities to develop skills and implement the nursing process in the care of the maternity patient and the newborn. The student will also further develop skills and competencies as learned in PNE 1120. Prerequisites: PNE 1120, PNE 1122, PNE 1123, and CPR (BLS) Certification. Corequisite: PNE 1132 or Departmental Approval.

***PNE-1132 Medical-Surgical Nursing II (10-0-0-10)**

This course continues the study of Medical Surgical Nursing I, especially the pathophysiological process and therapeutic intervention pertinent to the disorders of the respiratory, circulatory, and gastrointestinal systems as well as the study of urology and the male reproductive system. Prerequisites: PNE 1120 and PNE 1122. Corequisite: PNE 1130 or Departmental Approval.

***PNE-1134 Pediatric Nursing (2-0-0-2)**

This course is designed to guide the student in acquiring knowledge and skills in order to utilize the nursing process to meet the physical, psychological, and social needs of the pediatric patient. The etiology, treatment, and nursing care in common disorders, and illnesses that affect the infant, and child are presented. Prerequisites: PNE 1122 and PSY 105.

***PNE-1140 Clinical III-Pediatrics and
Medical-Surgical Nursing****(0-0-18-6)**

This course is designed to provide the student opportunities to refine and develop skills and implement the nursing process in caring for patients across the life span. Learning experiences are selected in acute care and long term care facilities to assist the student to develop skills necessary to provide comprehensive care to medical-surgical patients. Emphasis is placed upon assisting the student in the transition to a responsible member of the health team. Prerequisites: PNE 1130, PNE 1132, PNE 1134, and CPR (BLS) Certification. Corequisite: PNE 1142 or Departmental Approval.

PNE-1142 Medical-Surgical Nursing III*(10-0-0-10)**

This course is a continuation of Medical-Surgical Nursing II, especially the pathophysiological process and therapeutic intervention pertinent to the disorders of the nervous, endocrine, integumentary systems and sensory organs. Also included is the therapeutic role of the nurse in emotional or developmental disturbances in individuals. Prerequisites: PNE 1130 and PNE 1132. Corequisite: PNE 1140 or Departmental Approval.

PNE-1144 Nursing Seminar*(2-0-0-2)**

This course is structured to assist the individual in making the transition from the role of student to that of a functional member of the health team. Legal and vocational responsibilities are stressed. Prerequisite: Fourth-Quarter Status.

Political Science

POL-103 State and Local Government**(4-0-4)**

This course is a study of state and local government, state-federal interrelationships, the functions and prerogatives of the branches. Problems of administration, legal procedures, law enforcement, police power, taxation, revenues, and appropriations are included. Special attention is given to North Carolina governments. Prerequisite: None.

POL-110 Comparative Political Cultures**(3-0-3)**

Political comparisons between nations, political systems, emphasizing specific factors in the development, growth, and decline of national politics. Prerequisite: None.

Psychology

PSY-101 Introduction to Psychology**(3-0-3)**

This is an introductory survey of history and schools of thought in psychology, including topics such as intelligence, learning, motivation, and emotions. Prerequisite: None.

PSY-104 Group Process**(5-0-0-5)**

The study of group interaction and development. Topics include group development, dynamics, conflict resolution and behavioral roles of individuals within groups. Emphasis is placed on leadership styles and techniques for group work in social service settings. Prerequisite: SWK 101.

PSY-105 Human Growth and Development (3-0-0-3)

Human Growth and Development provides knowledge of the basic principles of physiological and psychological stages of the individual through the entire life span. Prerequisite: PSY 101.

PSY-151 Applied Psychology for Law Enforcement (3-0-3)

This course draws heavily from the field of social psychology and psychological concepts routinely applied in criminal justice. The primary subject areas discussed will be the psychology of conformity, communication, propaganda, persuasion, self-justification, aggression, prejudice, interview and confession, motivation, stress, neurosis, psychosis, personality disorders, sexual deviation, alcoholism and drug addiction. Prerequisites: PSY 101 and PSY 203.

PSY-201 Child Psychology (3-0-3)

Psychological development from infancy to adolescence, covering the development of learning, language, cognitive processes, social relations, intelligence, and moral/value systems. Also, specific developmental problems will be discussed along with possible remedial procedures. Prerequisite: PSY 101.

PSY-203 Abnormal Psychology (3-0-3)

This is a study of the major abnormal behavior patterns and ways by which these aberrant patterns of thinking and acting are developed. Some attention is given to prevention of mental illness and the study of normal defense and escape mechanisms. Prerequisite: PSY 101.

PSY-206 Applied Psychology (3-0-3)

A study of the basic principles of psychology, including perception, emotions, motivation, adjusting, and communicating, that promote growth and development both on the job and in one's personal life. Prerequisite: None.

PSY-208 Principles of Human Behavior (3-0-0-3)

The study of the dynamics of human behavior in the social environment. Topics include the characteristics of verbal and nonverbal communication: values as they relate to the helper and the client; game playing in relationships, assertive, passive and aggressive behaviors; defense mechanisms; and behavioral goal setting. Major theories relevant to interpersonal relations are presented including Maslow's Hierarchy of Needs, Erickson's eight stages of development, Powell's five levels of communication. Emphasis is placed on the application of theories to bring about change in the lives of clients. Prerequisites: PSY 101, SWK 115.

PSY-210 Industrial/Organizational Psychology (3-0-3)

The study of people in the workplace; the motivation and satisfaction/dissatisfaction with work, influences on performance, leadership, organizational structures, processes of communication, conflict and decision-making, selection and training, measurement of individual contributions in the organization, work design, and the process of change. Prerequisite: PSY 101.

PSY-211 Stress in Contemporary Society (3-0-0-3)

An introduction to stress in relation to cultural and environmental influences. Emphasis will be on real-life situations, evaluation of individual stress levels, intervention, and stress management techniques. Topics include positive and negative factors of stress, methods for assessing stress, coping patterns, anxiety, substance abuse, suicide, disaster and community crisis, grief and loss, stress in the family, and the psychiatric emergencies. Prerequisite: None.

PSY-1101 Human Relations**(3-0-0-3)**

A study of basic principles of human behavior. The problems of the individual are studied in relation to group membership, and relationships within the work situation. Prerequisite: None.

PSY-1105 Industrial Team Building**(2-0-2)**

This course is designed to prepare the student for work in a team environment. It will acquaint the student with the vision, organizational skills, and leadership responsibilities needed to cope in an industrial setting. This course will stress the importance of attitude, team work, and interpersonal skills. Prerequisite: None.

Radiography (Radiologic Technology)

RAD-100 Introduction to Radiologic Technology**(3-0-6-5)**

This course is designed to acquaint the new student to the profession of Radiologic Technology and to prepare them for the clinical components of the program. The rules and philosophies of the radiography program, radiology departments, and radiology profession are discussed in detail. Other topics presented include the history of the profession, ethics, medical legal issues, career advancement, and professional organizations. Issues such as certification, licensure, and professional development are also discussed. An orientation to the clinical component of the program is also included which allows the students to familiarize themselves with each of the clinical affiliates that they will later rotate through. Prerequisite: Curriculum Student Status.

RAD-102 Radiographic Technique I**(2-2-0-3)**

This course is designed to teach the beginning radiologic technology student the fundamentals of exposure, darkroom, and radiation protection. Conditions necessary for x-ray production, fundamental factors in the production of a radiograph and qualities of a radiograph with emphasis being directed toward the controlling factors of the qualities will be covered. Darkroom principles will include darkroom construction, automatic processing methods, chemical properties of the developer and fixer, film construction, and current media for holding x-ray film. The student will also learn the importance of radiation protection and how to apply the basic principles to protect the patient, themselves, and others. Prerequisite: Curriculum Student Status.

RAD-103 Medical Terminology**(3-0-0-3)**

This course is designed to help the student develop a vocabulary and proficiency in medical terminology as well as terminology used specifically in radiologic technology. Topics include Latin and Greek roots, prefixes, suffixes, and the abbreviations and symbolism necessary for a complete understanding of the terms used in the health field of radiologic technology. Prerequisite: None.

RAD-105 Nursing Procedures in Radiography**(3-2-0-4)**

This course acquaints the student with procedures and techniques used in the general care of the patient with emphasis on the role of the radiologic technologist. The basic pharmacology of various contrast agents and basic medications used in the radiology department will also be considered. Prerequisites: Curriculum Student Status and Completion of a Community CPR Course Within the Previous Three Months.

RAD-106 Clinical Education I (0-0-15-5)

The student will begin clinical rotations through the affiliate radiology departments under the direct supervision of a registered technologist. They will be allowed to apply the previously learned principles of radiographic exposure, radiation protection, and patient positioning. Clinical competency evaluations will be performed on areas previously covered in the laboratory and classroom. Prerequisites: RAD 100, RAD 102, RAD 103, RAD 105, and RAD 111.

RAD-111 Radiographic Positioning I (3-2-0-4)

This course presents an introduction to the basic principles and terminology of radiographic positioning techniques. The student will learn the positions necessary for radiography of the chest and abdomen as well as the different body systems contained in the abdomen along with the related anatomy. Students will observe, practice, and be evaluated according to a competency based system in a laboratory and classroom. Prerequisite: Curriculum Student Status.

RAD-112 Radiographic Technique II (2-2-0-3)

Radiographic Technique II is a continuation of RAD 102. During this quarter, students will be taught principles involved in conversion techniques, formulas and problem solving for density, photographic effect, inverse square law and magnification. Included also will be information relative to radiographic processing techniques and sensitometry. Prerequisite: RAD 102.

RAD-114 Clinical Education II (0-0-15-5)

This course is a continuation of RAD 106. Students continue to be evaluated on competency levels under the supervision of a registered technologist that have previously been covered in the classroom and laboratory. Prerequisites: RAD 106, RAD 115, and RAD 121.

RAD-115 Ethics and Communications in Radiography (3-0-0-3)

This course is designed to reinforce the concepts of medicolegal as well as ethical obligations of the radiographer. The role of the radiographer in patient-practitioner interactions will also be explored. The student will also be given the opportunity to complete a resume and mock job interview as an example of communications involved in securing a job as a radiographer. Prerequisite: Curriculum Student Status.

RAD-121 Radiographic Positioning II (3-2-0-4)

This course is a continuation of RAD 111. Emphasis will be placed on the positioning techniques necessary to adequately visualize the appendicular skeleton and the anatomy demonstrated. Students will observe, practice, and be evaluated according to a competency based system in a laboratory situation as well as in the classroom. Prerequisite: RAD 111.

RAD-124 Clinical Education III (0-0-15-5)

This course is a continuation of RAD 114. The student will continue to improve basic skills learned in the classroom, lab, and previous clinical experiences, and continue to perform competency examinations. Supervision will be provided by a registered radiologic technologist. Prerequisites: RAD 114 and RAD 131.

RAD-125 Radiographic Technique III (4-0-0-4)

This course is a continuation of RAD 112. Emphasis will be placed on the application of the principles of physics to the creation and utilization of x-rays. Electromagnetism, components of the x-ray machine, production of x-rays, x-ray interactions in matter, and the effects of x-ray characteristics on image quality prepare students to apply them in the clinical setting. Prerequisites: PHY 105 and RAD 112.

RAD-131 Radiographic Positioning III (3-2-0-4)

This course is a continuation of RAD 121. The student will continue to learn the positions and anatomy involved in radiography of the appendicular and axial skeleton as well as special trauma views of the immobile patient. Students will observe, practice, and be evaluated according to a competency based system in a laboratory situation as well as in the classroom. Prerequisites: BIO 101 and RAD 121.

***RAD-134 Clinical Education IV (0-0-24-8)**

This course is a continuation of RAD 124. The student will be under the supervision and will apply ionizing radiation and patient positioning with a registered technologist in the vicinity. Competency levels will continue to be evaluated as they are reached. The student will also be allowed to begin rotations through the specialty imaging areas such as CT, MRI, ultrasound, nuclear medicine, special procedures, and radiation therapy on an elective basis. Prerequisites: RAD 124 and RAD 201.

RAD-201 Radiographic Positioning IV (3-2-0-4)

This course is a continuation of RAD 131. The student completes laboratory and classroom assignments for the entire skeleton and major systems of the body. Student will observe, practice, and be evaluated according to a competency based system in a laboratory situation as well as in the classroom. Prerequisites: BIO 102 and RAD 131.

RAD-203 Clinical Education V (0-0-24-8)

This course is a continuation of RAD 134. The student will continue to enhance their skills and perform all types of radiographic procedures under the supervision of a registered technologist. Elective rotations in the speciality areas will be used to complement clinical experiences. Competency levels will continue to be evaluated. Prerequisite: RAD 134.

RAD-206 Imaging Modalities (4-0-0-4)

This course is designed to introduce unique areas in the imaging modalities. Topics covered include nuclear medicine, ultrasound, radiation therapy, computerized tomography, MRI, and special procedures. Prerequisites: RAD 134 and RAD 201.

***RAD-212 Clinical Education VI (0-0-24-8)**

This course is a continuation of RAD 203. The student will continue to enhance their skills and perform all types of radiographic procedures under the supervision of a registered technologist. Elective rotations in speciality areas will be used to complement clinical experiences. Competency levels will continue to be evaluated. Prerequisite: RAD 203.

RAD-213 Advanced Radiographic Seminar (4-0-0-4)

This course is designed to help the student prepare to take the American Registry of Radiologic Technologists. Students will participate in a series of simulated registries and use the results to help identify any educationally weak areas. Seminars on important topics and/or particularly weak areas will be presented. Prerequisite: All Previous Related and Major Curriculum Courses.

RAD-214 Radiographic Equipment and Quality Assurance (3-2-0-4)

This course is a continuation of RAD 125. Unique radiographic equipment, such as image intensifiers and automatic exposure controls will be discussed in detail. In addition, other specialized techniques will be presented. Concepts of equipment quality assurance will be stressed and specific tests will be performed by the students and analyzed to determine problem areas. Prerequisite: RAD 125.

RAD-215 Radiographic Pathology (3-0-0-3)

This course presents the student with an overview of the study of diseases. Emphasis will be placed on the study of the more common diseases that involve the major body systems with particular attention to those that are most often diagnosed with radiographic or other imaging procedures. Prerequisites: BIO 102 and RAD 201.

RAD-223 Clinical Education VII (0-0-24-8)

This course is a culmination of all the clinical courses. Students will concentrate on refining weak skills or investigating areas of particular interest under the supervision of a registered technologist. Competency levels will continue to be evaluated. Terminal competencies will be completed this quarter. Prerequisite: RAD 212.

RAD-225 Radiobiology and Radiation Protection (4-0-0-4)

This course is designed to provide the student with a thorough knowledge of the effects of radiation on biological organisms from the cell up to the entire being. Emphasis is placed on the short and long-term genetic and somatic effects to humans from high and low levels of radiation exposure. The course stresses the understanding and use of available methods that the technologist may use to keep patient and staff exposure to a minimum. Regulations dealing with radiation protection are covered as well as devices used to detect radiation levels. Prerequisites: BIO 102 and RAD 125.

RAD-234 Radiographic Film Evaluation (3-0-0-3)

This course presents the student with a logical film evaluation procedure to assist them in differentiating between diagnostic and poor quality radiographs. Students will present a variety of radiographs which will be critiqued for quality and demonstrated anatomy. Poor quality radiographs will be discussed to discern the best methods to be used to improve the film to a diagnostic level. Prerequisites: ENG 103, ENG 204, RAD 125, RAD 201, and RAD 215.

Sociology

SOC-101 Introduction to Sociology (3-0-3)

A study and analysis of humankind as social creatures: origins and development of culture, social organization and institutions, and social change. Prerequisite: None.

SOC-201 Social Problems (3-0-3)

A course designed to create a knowledge and awareness of the problems in society today to fit the students for involvement in those problems that affect their personal lives. Emphasis is on the nature, definition, and analysis of major social problems. While the primary stress is on the sociological point of view, information from other fields in the social sciences is incorporated. Prerequisite: None.

Spanish

SPA-100 Conversational Spanish (3-0-3)

This course introduces the students to Spanish on a beginning level and emphasizes basic conversational skills. It is recommended for those students who are interested in developing speaking skills only, as well as for those students who want a preliminary course as an introduction to SPA 101.

SPA-101 Spanish I (3-0-3)

This course provides an introduction to the study of the Spanish language and culture. The instruction emphasizes comprehension, speaking, reading and writing skills. Lab practice is expected of students. Prerequisite: None.

SPA-102 Spanish II (3-0-3)

This course is a continuation of SPA 101. Lab practice is expected of students. Prerequisite: SPA 101 or Placement Test.

SPA-103 Spanish III (3-0-3)

This course is a continuation of SPA 102. Lab practice is expected of students. Prerequisite: SPA 102 or Placement Test.

SPA-104 Spanish Civilization (Paleolithic to Modern) (5-0-5)

This course is a study of the geographical, political, cultural and historical aspects of Spain from paleolithic times through the nineteenth and twentieth centuries. The course is taught in English and provides students with an awareness of the Hispanic culture in both an historical and modern context.

SPA-105 Spanish American Civilization (3-0-3)

This course is a study of the geographics, political, cultural and historical aspects of Spanish America. The course is taught in English and provides students with an awareness of the Hispanic culture as it has developed in the Americas. Prerequisite: SPA 104.

SPA-201 Intermediate Spanish I (3-0-3)

This course is a continuation of the study of the Spanish language and culture. The course includes a grammar review, intensive conversational practice, cultural and literary readings and writing of simple compositions. Lab practice is expected of students. Prerequisite: SPA 103 or Placement Test.

SPA-202 Intermediate Spanish II (3-0-3)

This course is a continuation of SPA 201. Lab practice is expected of students. Prerequisite: SPA 201 or Placement Test.

SPA-203 Intermediate Spanish III (3-0-3)

This course is a continuation of SPA 202. Lab practice is expected of students. Prerequisite: SPA 202 or Placement Test.

Surveying Technology

SUR-101 Surveying I (2-6-4)

Theory and practice of plane surveying: measuring distances, differential and profile leveling, compass work, transit, stadia and transit-tape surveys. Prerequisite or Corequisite: MAT 101.

SUR-102 Surveying II (2-6-4)

Triangulation of ordinary precision; stadia and plane table; calculation of areas of land; cross sections, slope stakes, earth work computations, and mass diagrams; land surveying, topo, and mapping. Prerequisite: SUR 101.

SUR-103 Route Surveying (2-6-4)

Route surveys; simple, compound, reverse, parabolic and spiral curves, geometric design of highways; highway surveys and plans. Prerequisite: SUR 101.

SUR-104 Topographic Surveys/Photogrammetry (2-6-4)

The practice of methods of making topographic surveys with conventional instruments including the plane table. The use of photography for mapping purposes. The production of photomaps and the methods of ground control in aerial surveys. Prerequisite: SUR 102.

SUR-204 Advanced Surveying (2-6-4)

N.C. coordinate system, triangulation, trilateration, and astronomic observations. Filing and recording deeds. S.I.T. exam question review. Statistical error theory. Prerequisite: SUR 103 and SUR 104.

SUR-205 Surveying Research (1-2-2)

Deed and plat searches in Register of Deed offices, municipal planning offices, engineers' and surveyors' offices (private, state, and federal), and tax offices. Prerequisite: SUR 102.

SUR-206 Equipment Calibration (0-3-1)

Theory and practice of adjustments and calibrations to standard surveying instruments. Prerequisites: PHY 113, PHY 114, and SUR 102.

SUR-207 Field and Office Practice (1-3-2)

The basic elements and surveying management. Specific topics include office structure, field and office supervision, job estimating, purchasing, accounting. Financing and job records. Prerequisite: None.

SUR-209 Surveying Law (3-0-3)

The study of N.C. State Statutes on the practice of surveying, application of common law, and legal precedence, and legal principles of surveys and resurveys including boundary control and interpretation of deed descriptions. Prerequisite: None.

SUR-210 Construction Surveying (1-3-2)

Study and practice of basic principles of construction surveying including laying out structures, staking of pipes, grading, and others. Prerequisite: SUR 102.

SUR-214 Subdivision Planning (2-6-4)

Subdivision of land tracts including planning and detailing of roads, utilities, and recreational facilities. Drainage layouts and systems will be designed and drawn. Prerequisites: CIV 202, CIV 230, CIV 231, SUR 103, and SUR 210.

SUR-215 Senior Project (0-6-2)

A surveying project requiring research, field procedure and technique, and calculations with a final inked plat on mylar prepared for recordation. Prerequisites: SUR 214 and Senior Status.

Social Service Associate

SWK-101 Introduction to Social Services (3-0-0-3)

Fundamental concepts of the social service delivery system. Course topics include historical development and professional standards of social work and the paraprofessional's role in the social service delivery system. Emphasis is placed on the purpose of and the settings where social services are provided. Prerequisite: None.

SWK-102 Introduction to Welfare Service**(5-0-0-5)**

An introduction to the system of social services and institutions. Course topics include service delivery systems and the major public assistance programs. A portion of the course deals with the social welfare legislation process including formulation, legislation, funding, implementation, and evaluation. State and national social welfare legislation relevant to children, juveniles, elderly, and mentally or physically challenged individuals is examined. Prerequisite: SWK 101.

SWK-115 Helping Relationship Technology I**(5-0-0-5)**

A survey of major counseling theories and techniques relevant to social services and the helping relationship. The theoretical basis, founder(s), and techniques of the major theories are presented, compared, and contrasted, including Psychoanalysis, Existential-Humanistic, Behavior Modification, Transactional Analysis, Rational-Emotive, Client-Centered, Gestalt, Reality, and Group. Prerequisite: SWK 101.

SWK-202 Fundamentals of Interviewing**(3-0-0-3)**

The study of basic attending skills, therapeutic interviewing and documentation. Emphasis is placed on the interview process as it relates to helping, the intake interview, and methods of client referral to other services and/or other agencies. Topics include concepts of worker-client interaction, appropriate questioning technique, listening, feedback, techniques for eliciting information, positive regard for the client, and documentation of information. Prerequisites: ENG 101, SWK 115.

SWK-203 Casework Management**(3-0-0-3)**

The social service worker caseload, rules, procedures, the case file, basic forms, and management within the social service system. Topics include the social service administrative environment and the pressure it places on the worker, methods for prioritizing a caseload, planning, delegation, and methods for effective time management. Prerequisites: ENG 101, SWK 102.

SWK-205 Working with Diverse Populations**(3-0-0-3)**

An introduction to the sensitive issues of ethnicity, nationality, race, gender roles, sexism, sexual orientation, educational level, and other issues of diversity. Course content will focus on the integration and application of diversity issues in the helping relationship. Prerequisites: None.

SWK-210 Working with Disabled Clients**(3-0-0-3)**

An introduction to the needs and support services for individuals who are physically, mentally, or culturally challenged. The course covers legislation, management procedures used to work effectively with special needs clients, the Americans with Disabilities Act (ADA), and identification of services and programs that serve disabled individuals. Prerequisites: None.

SWK-215 Helping Relationship Technology II**(3-0-0-3)**

Emphasis in this course is on the concepts and skills essential to the helping relationship, including levels of the helping relationship, establishing rapport, assessing the client level of functioning, problem identification and clarification by the client, confrontation, client goal setting and implementation, evaluation, terminating, and appropriate follow-up. Prerequisite: SWK 115.

SWK-216 Social Service Job Readiness (3-0-0-3)

This course is an exploration of community agencies and services in Buncombe, Henderson, and Madison counties. The course provides up-to-date information on job opportunities in the social service field. Emphasis is placed on securing basic information on each agency including name, address, contact person, and a description of services. Each student will explore his or her job readiness in relation to the various community agencies and services. Prerequisite: Permission of course instructor.

SWK-218 Child Abuse and Neglect (3-0-0-3)

This course focuses on the maltreatment of children from a historical perspective, the various types of abuse and neglect, its causes, and proper treatment. Course topics include the intervention process, reporting laws and procedures. Focus is placed on the role of the social service paraprofessional and the system, as well as issues in the prevention of child abuse. Prerequisite: None.

SWK-221 Case Study & Internship I (1-0-10-2)

The case study portion of this course provides a forum for students to share their work experiences at the internship sites and to discuss the application of classroom concepts, such as procedures, treatment methods, and service techniques of the agency where the student interns. The student will maintain a weekly written log of internship experiences and present written and oral case studies. The internship portion of this course is an eleven-week assignment in a social service agency. The student observes and participates in such activities as staff meetings, interviews, client care, and agency planning under the supervision of a faculty member and a staff member from the participating agency. The internship experience requires completion of 10 hours per week of directed activity. The internship site is selected jointly by the student and the course instructor. Prerequisites: Permission of instructor.

SWK-222 Case Study & Internship II (1-0-10-2)

A continuation of SWK 221 Case Study & Internship I. The case study portion of this course provides a forum for students to share their work experiences at the internship sites and to discuss the application of classroom concepts, such as procedures, treatment methods, and service techniques of the agency where the student interns. The student will maintain a weekly written log of internship experiences and present written and oral case studies. The internship portion of this course is an eleven-week assignment in a social service agency. The student observes and participates in such activities as staff meetings, interviews, client care, and agency planning under the supervision of a faculty member and a staff member from the participating agency. The internship experience requires completion of 10 hours per week of directed activity. The internship site is selected jointly by the student and the course instructor. Prerequisites: SWK 221 and permission of instructor.

SWK-223 Case Study & Internship III (1-0-10-2)

A continuation of SWK 222 Case Study & Internship II. The case study portion of this course provides a forum for student to share their work experiences at the internship sites and to discuss the application of classroom concepts, such as procedures, treatment methods, and service techniques of the agency where the student interns. The student will maintain a weekly written log of internship experiences and present written and oral case studies. The internship portion of this course is an eleven-week assignment in a social service agency. The student observes and participates in such activities as staff meetings, interviews, client care, and agency planning under the supervision of a faculty member and a staff member from the participating agency. The internship experience requires completion of 10 hours per week of directed activity. The internship site is selected jointly by the student and the course instructor. Prerequisites: SWK 222 and permission of instructor.

Tool, Die and Mold Making

***TDM-1201 Machine Processes I**

(3-0-12-7)

This course is designed to introduce the student to the tools, instruments, machines, and methods used in the tool and die shop. Basic die-making theory will be presented as it pertains to simple piercing, blanking, and bending dies. Each student will be subjected to a series of projects requiring extreme proficiency. Prerequisite: Machine Shop Graduate or Equivalent.

***TDM-1202 Machine Processes II**

(3-0-12-7)

This course is a study of certain individual parts that go into a die assembly. Students will go into detail concerning their making, assembly, functioning and properties necessary for satisfactory service. Continued project work will point out the requirements for precise work. Prerequisite: TDM 1201.

***TDM-1203 Die and Mold Construction**

(1-0-3-2)

This course involves students in the hands-on activities used in the design and building of dies and molds. Students will apply previous classroom, lab, and shop experiences in the assigned project work. The course will conform to an actual tool room atmosphere as is possible in an educational setting. Prerequisites: TDM 1205 and Graduation from the Machinist Program or Equivalent.

***TDM-1204 Machine Processes III**

(3-0-12-7)

This course is a continuation of TDM 1202 in which students will make a detailed study of die-block construction, strippers and stock guides, shedders and knock-outs, nest gages, and pushers. Project work has advanced to the finish grinding and assembly stage requiring high quality work from the student. Prerequisite: TDM 1202.

***TDM-1205 Fundamentals of Mold Construction**

(3-2-0-4)

This course is a study of plastics in general and plastic terminology and subjects the student to the fundamental processes and basic construction of plastic molds (compression, transfer, and injection), molds for die castings (pressure molding of non-ferrous alloys), and rubber molds. The student will operate compression and injection molding machines and study blueprints and component parts of the molds in these machines. Prerequisite: None.

***TDM-1206 Machine Processes IV**

(3-0-12-7)

A study of die stops completes the study of die components as presented in this course. Stock strip utilization and strip layout will be covered. Die sets and purchased parts will be discussed. A study of die assembly, set up practices, punch press operation, and a miscellaneous group of methods is necessary to complete this course. Prerequisite: TDM 1204.

***TDM-1207 Special Problems and Molding**

(3-4-0-5)

This course is a continuation of TDM 1203 and will be used to subject the student to various operations within local industries. Numerous field trips will be scheduled to review operations of pressroom equipment, molding, automatic assembly and the building and maintenance of the equipment. Continued project work will better acquaint the student with dies, molds, jigs, fixtures and gaging. Prerequisite: TDM 1203.

Tool Design Technology

TDT-101 Geometric Tolerances and Inspection Procedures

(1-2-2)

Application of Geometric Dimensioning and Tolerance to insure interchangeability of parts, setting datums, establishment of tolerances, effect of datums, and tolerances on gauges and tool design, use of gauges and inspection instruments, inspection procedures, and basics of statistical quality control. Corequisite: DFT 103 or Departmental Approval.

TDT-105 Manufacturing Cost Analysis (1-2-2)

An introduction to the factors that affect manufacturing costs. Concepts include fixed and variable burden rates, material usage, production rates, loss factors, set up costs, scrap recovery, design economy, economics of decision making, break-even and least cost analysis, and difference between manufacturing alternatives when related to the time value of money. Prerequisite: None.

TDT-201 Tool Design I (2-6-4)

An introduction to tool design including the design of basic jigs, fixtures, and gauges. Emphasis will be on fundamentals of tool design, tool planning, tool room practices, capabilities of applicable machine tools and cutting tools, drafting practices related to tool design, selection and use of materials and standard components, use of catalogs and manuals, and tool costs. Prerequisites: DFT 103 and MAT 102 or Departmental Approval.

TDT-202 Tool Design II (2-6-4)

The theory and application of pressworking operations employed in the fabrication of sheet metal parts include operations such as blanking, piercing, punching, trimming, forming, and drawing. Design projects involve study and design of compound and progressive dies. Prerequisite: None.

TDT-203 Tool Design III (2-6-4)

The study of fundamental processes, terminology, basic construction and design of plastic molds (compression, transfer, and injection) and molds for die castings. Shrinkage factors, runner and gate types, parting lines, draft, bosses, ribs, warpage, knockouts, cams, and unscrewing mechanisms are covered. Prerequisite: None.

***TDT-204 CAD/CAM Operations in Automation (2-6-4)**

The study of automation and unique function equipment including a wide variety of applications such as automatic assembly equipment, gauging, and sorting. The course includes a comprehensive tool design project applicable to the needs of local industry and requires research and utilization of previous course work by the student. Prerequisite: Departmental Approval.

***TDT-210 Introduction to CNC and Robotic Applications (3-3-4)**

An introduction to principles underlying numerical controlled tool concepts: tapes, tape punch, control units, machines, and methods used for manual and computer assisted programming. Survey of fundamental concepts and applications of robotic flexible automation systems. Special emphasis will be on field trips to industry. Prerequisites: MEC 101, MEC 111, or Departmental Approval.

Welding

WLD-1101 Basic Welding (1-2-0-2)

Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembly and operating the welding equipment. Practice will be given for surface welding and flame cutting. Emphasis on electric arc and gas welding methods applicable to mechanical repair work. Bronze welding and silver soldering may also be covered. Prerequisite: None.

WLD-1112 Mechanical Testing and Inspection**(1-3-0-2)**

The standard methods for mechanical testing of welds. The student is introduced to various types of tests and testing procedures and performs the details of the test which will give adequate information as to the quality of the weld. Types of tests to be covered are bend, destructive, free-bond, guided-bend, nick-tear, notched-bend, tee-bend, non-destructive, V notch, Charpy impact, etc. Prerequisites: WLD 1120 and WLD 1121.

WLD-1120 Oxyacetylene Welding and Cutting**(3-0-12-7)**

Introduction to the history of oxyacetylene welding, the principles of welding and cutting, nomenclature on the equipment, assembly of units. Welding procedures such as practice of puddling and carrying the puddle, running flat beads, butt welding in the flat, vertical and overhead position, braxing, hard and soft soldering. Safety procedures are stressed throughout the program of instruction in the use of tools and equipment. Students perform mechanical testing and inspection to determine quality of the welds. Prerequisite: None.

WLD-1121 ARC Welding**(3-0-12-7)**

The operation of AC transformers and DC motor generator arc welding sets. Studies are made of welding heats, polarities, and electrodes for use in joining various metal alloys by the arc welding process. After the student is capable of running beads, butt and fillet welds in all positions are made and tested in order that the student may detect his/her weaknesses in welding. Safety procedures are emphasized throughout the course in the use of tools and equipment. Prerequisite: None.

WLD-1122 Commercial and Industrial Practices**(3-0-9-6)**

Designed to build skills through practices in simulated industrial processes and techniques; sketching; and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and then actually following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding and nondestructive tests and inspection. Prerequisites: WLD 1120 and WLD 1121.

WLD-1123 Inert Gas Welding**(1-0-3-2)**

Introduction and practical operations in the use of inert-gas-shield arc welding. A study will be made of the equipment, operation, safety and practice in the various positions. A thorough study of such topics as: principles of operations, shielding gases, filled rods, process variations and applications manual and automatic welding. Prerequisites: WLD 1120 and WLD 1121.

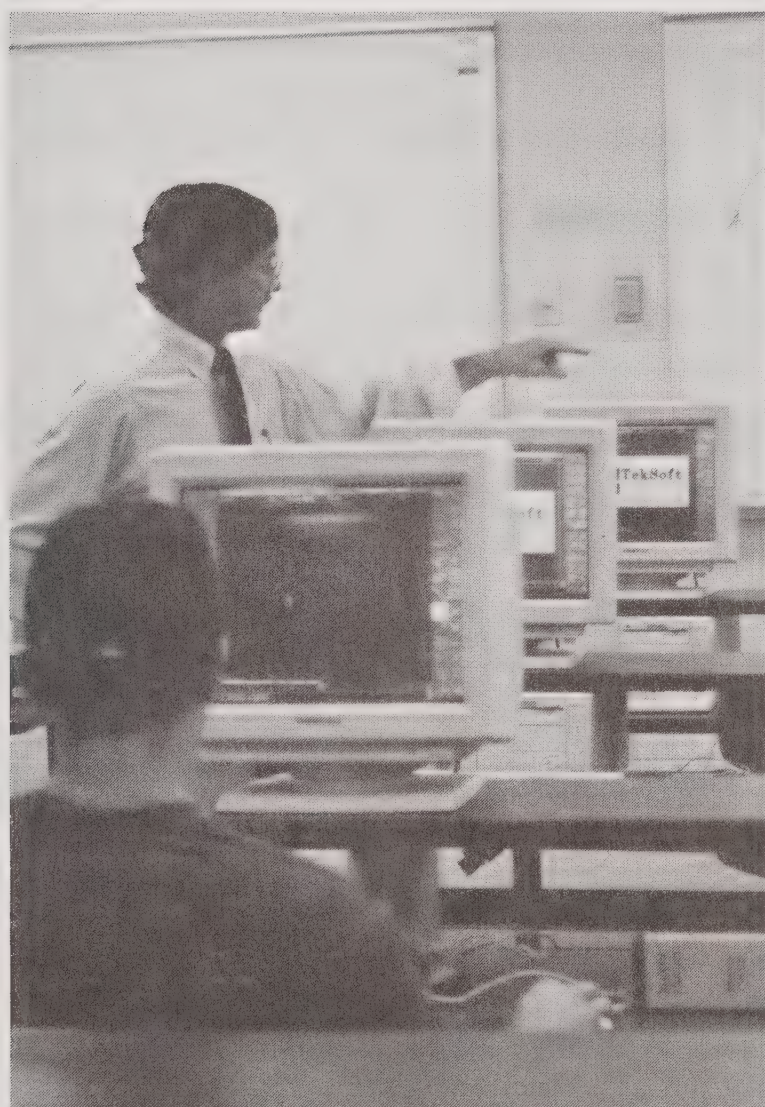
WLD-1124 Pipe-Welding**(3-0-12-7)**

Designed to provide practice in the welding of pressure piping in the horizontal, vertical, and horizontal fixed position using shield metal arc welding processes according to Sections VIII and IX of the ASME code. Prerequisite: WLD 1121.

WLD-1125 Certification Practices**(3-0-6-5)**

This course involves practice in welding the various materials to meet certification standards. These student uses various tests including the guided bend and the tensile strength tests to check the quality of his work. Emphasis is placed on attaining skill in producing quality welds. Prerequisites: WLD 1123 and WLD 1124.

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This catalog should not be considered a contract between Asheville-Buncombe Technical Community College and any prospective student.

Curriculums may be altered to meet the needs of individual departments. A minimum enrollment is required in order to offer or continue a class. Adjustments in course sequence and schedule may be made as necessary.

All charges for tuition and fees are subject to change as required by the Board of Trustees.



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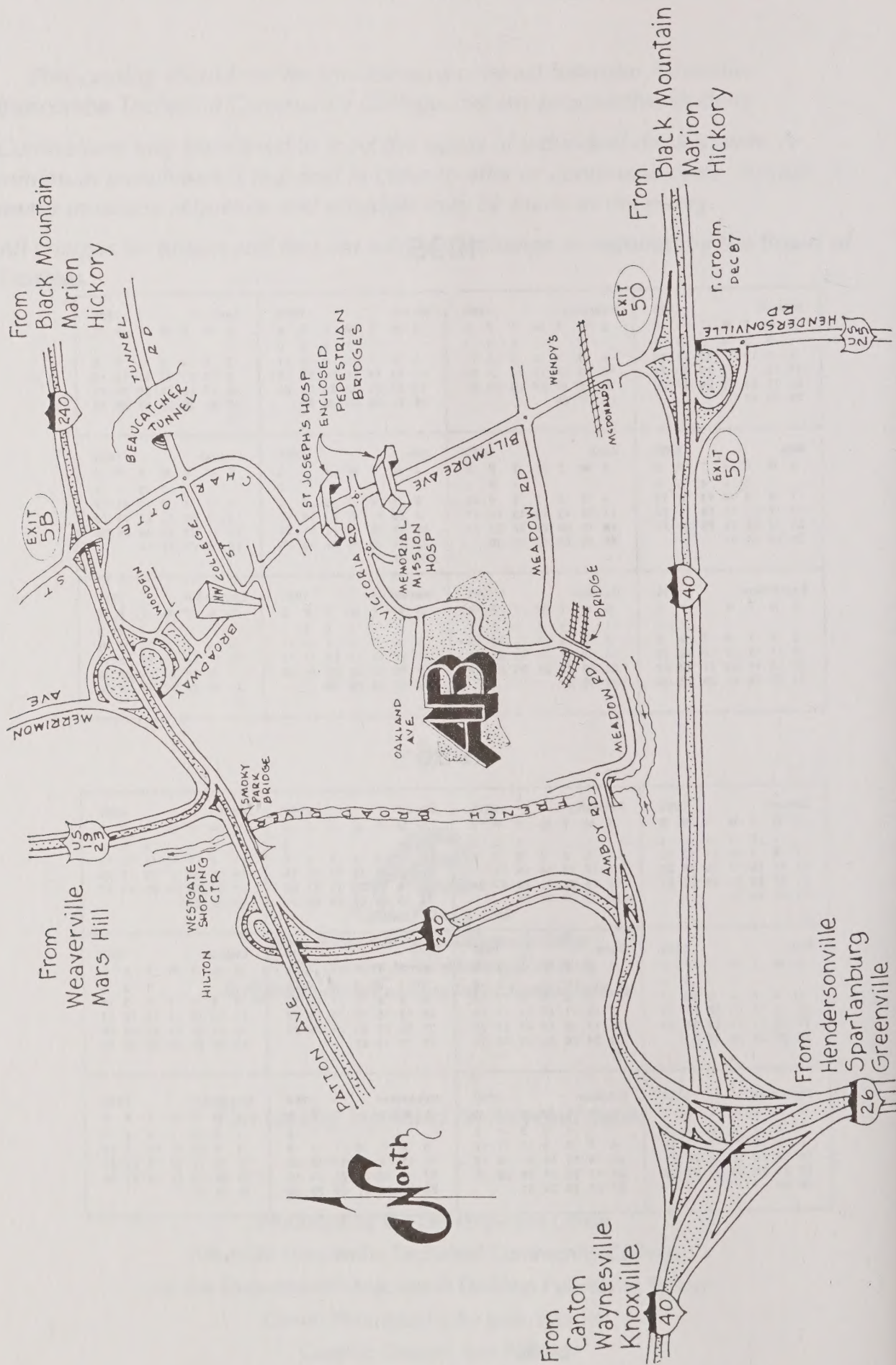
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21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
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September1995							October1995							November1995							December1995						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2	1	2	3	4	5	6	7					1	2	3	4					1	2
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
24	25	26	27	28	29	30	29	30	31					26	27	28	29	30			24	25	26	27	28	29	30
																					31						

1996

January1996							February1996							March1996							April1996							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
	1	2	3	4	5	6						1	2	3						1	2		1	2	3	4	5	6
7	8	9	10	11	12	13	4	5	6	7	8	9	10	3	4	5	6	7	8	9	7	8	9	10	11	12	13	
14	15	16	17	18	19	20	11	12	13	14	15	16	17	10	11	12	13	14	15	16	14	15	16	17	18	19	20	
21	22	23	24	25	26	27	18	19	20	21	22	23	24	17	18	19	20	21	22	23	21	22	23	24	25	26	27	
28	29	30	31				25	26	27	28	29			24	25	26	27	28	29	30	28	29	30					
														31														
May1996							June1996							July1996							August1996							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
				1	2	3							1							1	2	3				1	2	3
5	6	7	8	9	10	11	2	3	4	5	6	7	8	7	8	9	10	11	12	13	4	5	6	7	8	9	10	
12	13	14	15	16	17	18	9	10	11	12	13	14	15	14	15	16	17	18	19	20	11	12	13	14	15	16	17	
19	20	21	22	23	24	25	16	17	18	19	20	21	22	21	22	23	24	25	26	27	18	19	20	21	22	23	24	
26	27	28	29	30	31		23	24	25	26	27	28	29	28	29	30	31				25	26	27	28	29	30	31	
							30																					
September1996							October1996							November1996							December1996							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
1	2	3	4	5	6	7				1	2	3	4	5					1	2	1	2	3	4	5	6	7	
8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14	
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21	
22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28	
29	30						27	28	29	30	31			24	25	26	27	28	29	30	29	30	31					



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